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Katzie & the Wapato: An Archaeological Love Story

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ABSTRACT

Archaeological site DhRp-52 is a long-lived multi-component residential site situated in the Fraser River Delta, about 50 km upriver from Vancouver, British Columbia, Canada. The wetland wapato (also known as Indian potato, ǰʷəq̓ʷál̓s in həńq̓əmiń əm̓, and Sagittaria latifolia in Latin) garden at this site was built 3800 years ago, and for the following 700 years residents of DhRp-52 managed the garden to mass produce the wapato's wild tubers. The discovery of this garden is challenging conventional notions of Northwest Coast peoples as developing politically, ritually, and socioeconomically complex societies in the absence of farming. This paper tells the story about a time before memory when ancestors of contemporary Coast Salish q̓íc̓əy̓ (Katzie) people fell into a deep and mutual love with the wapato, building a life to accommodate their collective desires and needs. Katzie ancestors sustained their knowledge and appreciation of wapato through hundreds of generations. Today, this knowledge is being applied through experimental research and ecological restoration in Katzie territory.

Résumé: Le site archéologique DhRp-52 est un site résidentiel longévif à composantes multiples situé dans le delta du fleuve Fraser, à environ 50 km en amont de Vancouver en Colombie-Britannique au Canada. Le potager de wapato des marais (aussi appelé pomme de terre indienne, x̌ʷəq̓ʷáɬs in hən̓q̓əmin̓əm̓ et Sagittaria latifolia en latin) dudit site fut construit il y a 3800 ans et pendant les 700 années subséquentes, les résidents de DhRp-52 l'ont entretenu pour produire en masse des tubercules sauvages de wapato. La découverte de ce potager remet en question des notions conventionnelles sur les peuples côtiers du nord-ouest comme étant capables de bâtir des sociétés complexes d'un point de vue politique, rituel et socioéconomique sans pratiques agricoles. Le présent article traite d'une époque immémoriale où les ancêtres du peuple Coast Salish (Katzie) contemporain sont simultanément tombés éperdument amoureux du wapato, créant ainsi un style de vie accommodant leurs désirs et besoins collectifs. Les ancêtres Katzie ont préservé leurs connaissances sur le wapato et leur appréciation du tubercule des centaines de générations durant. De nos jours, ces connaissances sont appliquées dans le cadre de recherche expérimentale et de restauration écologique sur le territoire Katzie.

Resumen: El yacimiento arqueológico DhRp-52 es un yacimiento residencial de múltiples componentes de larga vida situado en el delta del río Fraser, unos 50 km aguas arriba de Vancouver, Columbia Británica (Canadá). El humedal de wapato (también conocido como patata india, x̌ʷəq̓ʷáɬs en hən̓q̓əmin̓əm̓, y Sagittaria latifolia en latín) de este yacimiento se construyó hace 3800 años y durante los siguientes 700 años los residentes de DhRp-52 cultivaron el huerto para producir en masa tubérculos silvestres de wapato. El descubrimiento de este huerto cuestiona las nociones convencionales de que los pueblos de la Costa Noroeste eran sociedades desarrolladas política, ritual y socioeconómicamente complejas, en las que no existía la agricultura. Este documento cuenta la historia de una época que no recordamos en la que los ancestros del pueblo q̓íc̓əy̓ (Katzie) de Coast Salish se enamoraron profunda y mutuamente del wapato, creando una vida para satisfacer sus deseos y necesidades colectivos. Los ancestros de los Katzie mantuvieron sus conocimientos y apreciación del wapato a través de cientos de generaciones. Actualmente, estos conocimientos se aplican a través de la investigación experimental y la restauración ecológica en el territorio Katzie.

KEY WORDS

Love, Wapato, *Sagittaria latifolia*, Katzie First Nation, Coast Salish, Northwest Coast, Community archaeology, Co-evolution, Root food

Introduction

Archaeological site DhRp-52 is a long-lived multi-component residential site situated in a portion of the Fraser River Delta called the Pitt Lowlands, about 50 km upriver from Vancouver, British Columbia, Canada (Figure 1). The site was re-discovered in 2006 in the construction right-of-way for the planned Golden Ears Bridge and intensively excavated by the archaeology unit of Katzie (qíc̓əy̓ in hən̓q̓əmin̓əm̓) First Nation (Hoffmann 2017a), a Coast Salish community whose ancestors likely built and sustained this site for some 2500 years, from ca. 5700 cal BP to ca. 3200 cal BP. The wetland wapato (also known as Indian potato, x̌ʷəq̓ʷə́l̓s, and *Sagittaria latifolia* in Latin) garden at this site was built 3800 years ago and managed for some 700 years to mass produce this wild tuber. The discovery of this garden is challenging conventional notions of Northwest Coast peoples as developing politically, ritually, and socioeconomically complex societies in the absence of farming[1] (Hoffmann 2010; Hoffmann et al. 2016). As archaeologists, First Nations, and many other communities of interest explore the significance of this find, we couch it here in other terms: as a love story.

In the following pages, we share the story of 'Katzie and the Wapato' using elements of a conventional (Western) story arc—beginning, rising action, climax, falling action, and ending. A Katzie vision of the story told here is rendered in Figure 2. We incorporate archaeological data to set the scene; archaeobotanical data and Katzie knowledge to develop character; anthropological theory, Coast Salish philosophy, and a little bit of imagination to drive the plot; and contemporary Katzie experience to find beginnings in an ending. While some of this work is presented in a tongue-in-cheek fashion, our intention is it to meet this journal's call for non-standard formats in order to diversify the form and tone of site reporting (Gero 2015) and open alternate pathways for understanding and explaining the events we unearth in the archaeological record, including the possibilities of love (Sahlins 1996; Supernant and Lyons 2017; van der Veen 2014). Throughout the paper, you will see hən̓q̓əmin̓əm̓ terms for Katzie cultural concepts and resources alongside their English and Latin forms.

A Beginning

This story is set in the beautiful Pacific Northwest of North America, a wet temperate rain forest with towering redcedars (x̌pé y̓əɬp, *Thuja plicata*) and mighty salmon-bearing (scé·ɬtən, *Oncorhynchus* spp.) rivers. The landform on which DhRp-52 was built was once part of a large estuary formed as

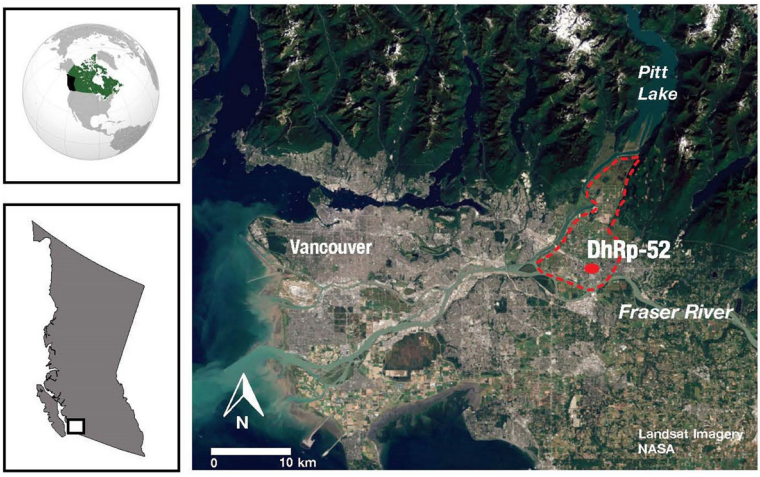

Figure 1. Location of DhRp-52 within contemporary Katzie First Nation territory

the Pitt River Delta migrated northwestwards during the Holocene (Hoffmann et al. 2016). Proto-Coast Salish peoples first settled this territory about 11,000 years ago with the melting of the Cordilleran Ice Sheet (Schaepe 2001: 14). These ancestors clearly saw something in the lush, rich wetlands of the delta, where bog cranberries (qʷəmcáɬs, *Vaccinium oxycoccus*) and blueberries (qʷx̌ʷáməɬs, *Vaccinium uliginosum*), white sturgeon (qʷtá·yθən, *Acipenser transmontanus*), beaked hazelnuts (stθícəm, *Corylus cornuta*), waterbirds (maʔaqʷ, e.g. Anatidae), and many other resources flourished. It is not difficult to imagine why they chose this spot for their home: ask any resident of the Vancouver region today!

Over time, this community came to truly dwell here, their sense of self and relation emerging as they literally and figuratively 'rooted' in this place and this landscape (Clifford 2013). This kind of rootedness in place, and the creation and continuity of a lifeway, draws on Heidigger's (1971) notion of 'dwelling', meaning to cherish and protect, to work the soil, to literally 'dig in'. The notion of 'building' is intimately connected to dwelling, connoting a sense of creating a habitual place within which one makes a life, and encourages and nurtures that life (Ingold 2000: 172–81). In the lowlands surrounding DhRp-52, Katzie oral histories record that the vast system of intertwining sloughs were gifted to them by their cultural hero Swaneset as travel corridors that tied together a network of streams, marshes, bogs, and fens (Hoffmann et al. 2001; Jenness 1955: 13; Spurgeon 2001: 108). Over time, social and ecological landscapes throughout the Pacific Northwest would be shaped and cultivated to suit the needs and

Figure 2. A Katzie vision of their relationship to wapato, showing wapato growing within the rock pavement at DhRp-52, the Sandhill Crane Sisters, and the hands of Swaneset creating resources for the Katzie people

desires of their First Nations managers (Deur and Turner 2005; Lepofsky and Lertzman 2008; Lyons 2017; Turner 2014).

The residents of DhRp-52 founded this site 5700 years ago. They built large rectangular houses on high ground above the adjacent wetlands that appear similar in size and structure to ethnographically documented longhouses. Animal remains are largely absent, and the few plant remains recovered from the residential (dry) site tell us that residents were harvesting plant foods from the local forests, in the form of salal berry (ʔéqe, *Gaultheria shallon*), wild raspberry (ʔɬqʷə́m, *Rubus* spp.), and rose hips (qélq, *Rosa* spp.) (Hoffmann et al. 2016). The seed rain deposited on the wet site during this early period suggests that the plot where the garden would be placed was at this time a low-energy section of the slough edge dominated by sedges.

Rising Action

Katzie ancestors, the central characters in our story, had inhabited DhRp-52 for hundreds of generations by the time they built the wetland garden (ʔqʷéx̌t). In this time, they created a life and livelihood and developed a

relationship with the other main protagonist in our story: the wapato. Wapato is a geophyte ('root food') that is part of the Alismataceae, or water plantain family. It is a perennial aquatic to semi-aquatic herb that propagates by rhizomes. In coastal British Columbia, wapato populations were concentrated in the Pitt Lowlands prior to European contact (Suttles 1955). Historically, wapato flourished particularly in the Katzie homelands and was avidly sought in exchange by communities throughout Coast Salish territory to the extent that it has been called a cultural keystone species (Garibaldi and Turner 2004). Root foods feature in many Coast Salish myths, while wapato is a focus of Katzie origin stories (Boas 2002: 89–132; Jenness 1955; Lyons et al., forthcoming).

During the habitation of DhRp-52, the residential part of the site would have been located about a metre above sea level and subject to flooding during the annual Fraser River freshet (Hoffmann et al. 2016). The adjacent wet site, where the garden was situated (Figure 3), would be subject to the daily influence of tides. In the spring and summer, wapato plants send a robust stalk with distinctive arrow-shaped leaves and a large seed head above the water level while producing round to ovoid tubers (2–4 cm) in the submerged substrate (see Figure 2). Several wetland species consume parts of the wapato plant. Muskrats (sq̓ə́ɬq̓əɬ, *Ondatra zibethicus*) and some diving ducks forage for tubers underwater, waterbirds like the Canada goose (ʔéx̌ə, *Branta canadensis*) forage primarily on leaves, and

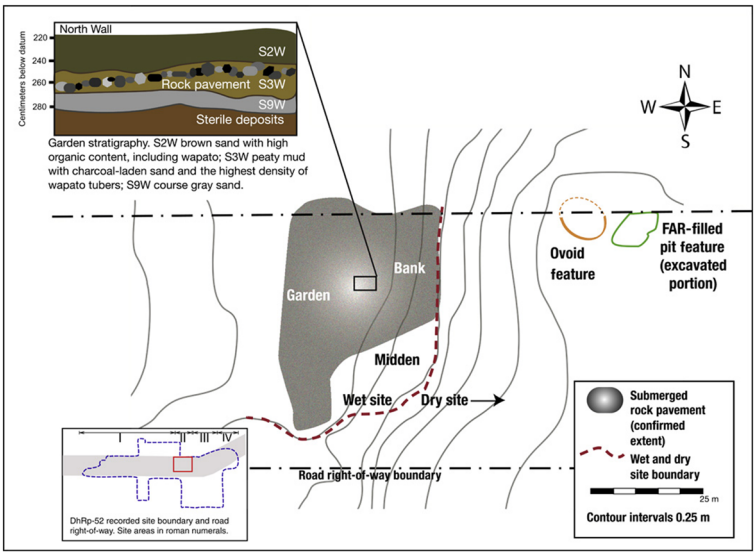

Figure 3. Plan of the DhRp-52 wet site garden and adjacent residential dry site

others like the sandhill crane (slí·m, *Grus canadensis*) likely forage on both tubers and seeds (cf. Garibaldi 2003).

How did the Katzie people fall in love with the wapato? Coast Salish philosophy and anthropological theory help move our story along. The hən̓q̓əmin̓əm̓ word šxʷəlí (shxweli) means spirit or life force. Šxʷəlí is believed to exist everywhere in the Coast Salish world and to tie its elements together—it pervades animals and fish and plants, rocks and water and earth, the hearts of people and all other beings (McHalsie 2007: 104–5; and cf. Jenness 1955: 36). Redcedar's šxʷəlí is an ancestor that was once transformed from a man into a tree; when Coast Salish people use any part of the cedar, they are taught to say a prayer to this ancestor, Xepa:y, and to take care of that tree respectfully (McHalsie 2007: 104–5).

If all beings in the natural world are sentient in Coast Salish philosophy, then the ancestral Katzie who once discovered and settled the Pitt Lowlands would have discovered and become closely accustomed to all of these šxʷəlí. Wapato has a šxʷəlí with a powerful relationship to the Katzie people. In the *Botany of Desire*, Michael Pollan talks about the strong mutualistic relationship shared between people and particular plants (and see van der Veen 2014), such as the profound role of food plants like the potato (sqéwθ, *Solanum tuberosum*) and apple (ʔépəls, *Malus pumila*) on (Western) human histories. The potato was originally domesticated in the Peruvian Andes and brought to the Northwest Coast from Irish stock, but that is another story (Pollan 2001; Suttles 1951). The apple, domesticated in Kazakhstan, was a major force in the colonial 'domesticating' of the American West (Pollan 2001). These are plants that drew their human counterparts into a relationship through their edibility and desirability that changed the course of both their stories. Pollan (2001: 243–44) has called this

> …a coevolutionary drama, a dance of human and plant desire that has left neither the plants nor the people taking part in it unchanged…Survival of the sweetest, the most beautiful, or the most intoxicating proceeds according to a dialectical process, a give-and-take between human desire and the universe of all plant possibility. It takes two, but it doesn't take intention, or consciousness.

Niche construction theorists make very similar arguments about the co-evolution of humans and prospective domesticates, focusing intently on relationship building but without the intrigue of a love story (e.g. Laland and O'Brien 2010; Smith 2007; Zeder 2016). There are many food plants—both domesticated and undomesticated—that co-evolved with Indigenous communities throughout the Americas (and beyond!) whose stories are celebrated in regional oral traditions but little known in the Western mainstream.

Katzie origin stories credit their introduction to wapato to the marriage of the Sandhill Crane sisters with the cultural hero Swaneset (Jenness 1955; and Figure 2). Ancestral Katzie may indeed have learned to eat wapato by watching sandhill cranes enthusiastically dig and consume the tubers and seeing that they were both edible and desirable (cf. Lyons et al., forthcoming; Turner 2014, v.2: 162). Like potatoes, wapato is easily baked, boiled or roasted, rather than needing several days of pit-cooking like many root foods on the Northwest Coast (Lyons and Ritchie 2017; Peacock 2008; Turner 2014). The taste is sweetish, somewhere between a potato and a chestnut. Wapato can be stored for several months either raw or cooked. By 3800 years ago, proto-Katzie families held a closely intertwined relationship with wapato and its šxʷəlí, in at least the one garden plot at DhRp-52 (which is likely not a unique entity). These gardeners, clearly, were as besotted with the wonders of this plant as the plants were with the people, who grew, cultivated, and carefully managed their plots to flourish to the point of becoming 'economic' or 'cultural' domesticates (Lyons et al., forthcoming; Zvelebil 1993).[2]

Both Pollan and Ingold, following this line of thinking, debunk the conventional narrative of domestication involving 'the human transcendence of nature', arguing instead that plant cultivars are an equally powerful and influential force in this mutualistic process (Ingold 2000: 77). Ingold continues that people do 'not *make* crops or livestock, but rather…set up certain conditions of development within which plants and animals take on their particular forms and behavioural dispositions'. The primary factors, here, are time and the respective life cycles of the individuals involved (Ingold 2000: 86)—wapato may die back annually and live for scores of years, residents of DhRp-52 may have lived a half century, and the redcedars who bordered their slough-edge village lived on the order of thousands of years. It is no wonder that their šxʷəlí is so respected; it is no wonder that their histories are all intertwined. All this love, and we have not even reached the pinnacle of our plot line!

Climax

The climax of our story arc arrives with the construction and long tenure of the wetland garden—q̓ʷéx̌t in həńq̓əmiṅəm̓—enabled by the ingenuity of the Katzie ancestors and their loving relationship to the wapato. As we head towards the main action, we will have pictures to illustrate, visiting dignitaries, bad guys, and tricksters on the horizon. But first, our final character, the true clincher: a rock pavement.

During the Late Component at DhRp-52, ca. 3800 years ago, Katzie ancestors built their wetland garden. Its defining feature is a submerged

rock pavement of uniform-sized pieces of fire-altered rock interspersed with rounded cobbles (Hoffmann et al. 2016; seen in profile in Figures 2 and 3). The pavement measures at least 11 17 m, and the stones that comprise it are laid one course thick in the garden centre and two courses thick towards the adjacent embankment. The rock feature is clearly anthropogenic in origin, with 65% of the stones being fire-altered or otherwise modified. These rocks had to have been brought in and purposefully placed, as the slope of the creek is (and was) so low it would be impossible for the force of water to move them. The feature has no known analogue. The vast majority of 3700+ wapato tubers and rhizomes were found packed within and above the rock pavement, in growing position, some with attached rhizomes, in charcoal-rich substrates. The rock pavement likely functioned as a physical barrier to prevent the penetration of rhizomes deep into the underlying substrate, thereby making the tubers available for harvest at a predictable and accessible depth (Hoffmann et al. 2016). Like a smoking gun, 185 digging stick tips (sqéləx̌) were found associated with the garden, some lodged in the pavement, many of them snapped during use (Figure 4).

What on earth happened between the rising action and now? Well, DhRp-52 villagers engineered the garden's hydrology to make it wetter and thereby amplified the growth of this resource many times over. Both the ancient seed rain and the micromorphology of the site show this intentional manipulation (Hoffmann et al. 2016). As the garden grew, the community built at least one huge pithouse and a massive outdoor processing

Figure 4. Digging stick tips found embedded in the rock pavement at DhRp-52

feature (measuring 242 m^2) whose ever-expanding edges were associated with multiple thousands of stone beads. As explored below, residents began to make, acquire, and wear a variety of decorative and status-oriented items such as labrets and ear spools (Hoffmann 2010).

In this period of safety and plenty, we can put our minds to imagining the kind of environment these villagers lived in. Neither a wetland garden, nor a carefully cultivated indigenous landscape, looks anything like its European counterparts (cf. Deur 2005; Lepofsky et al. 2015). There was no plowing of furrows or planting of annual seed; rather, most plants were managed as perennials, and many root foods, like wapato, propagated vegetatively. At the time of contact, Katzie communities managed key plant food, medicinal, and fibrous resources using such techniques as weeding, burning, selective harvesting, pruning, and transplanting (Suttles 1955, 2005; Turner and Peacock 2005). And, as with many indigenous worldviews, their principles required these communities to 'take care of everything that belong[ed] to [them]' (McHalsie 2007; and see Lyons et al. 2016).

Figure 5 brings us into a chilly overcast day in the season of sx̌ʷəq̓ʷə́l̓s, early fall, the time when you 'get wapato'. Women in the mid-ground are testing the ripeness of bog cranberries; another in the foreground is harvesting wapato in the traditional way—with her feet in the cold water of the slough, loosening the tubers with her toes, which then rise to the sur-

Figure 5. Cx̌ʷəq̓ʷə́l̓s (fall) harvest at the DhRp-52 slough-edge

face and float. She carries an open-work tump basket to collect the wapato. In the middle distance, shovel-nosed canoes are pulled up on the beach below the sqémél (pithouses). In the far distance, we see the fringe of forest at the village's edge, where edible berries may well have been encouraged and even transplanted (Armstrong 2017; Lyons and Orchard 2007: 41; Turner 2014, v.2: 210–112).

While this picture appears completely 'natural', both the proximity and distribution of plant colonies are probably very intentional. As passing generations of proto-Katzie farmers watched the annual life cycle of wapato, they noted, discussed, made choices and modifications about its management. They observed that wapato grew better when more inundated and they tinkered with the stream channels to make the plot more aqueous; they observed that a level footing improved ease of harvest and built the rock pavement; they saw that its growth improved with fertilizer and added charcoal mulch to the mix. The wapato rewarded them for their attentions, and its growth amplified. The people told stories of this plant's šxʷəlí through the long winter nights. Other (floral and faunal) resources also merited such careful attention and were cultivated across the landscape, generating their own carefully observed histories that grew into origin myths.

In Figure 6, we see a flotilla of canoes arriving in the village a couple of weeks later through the slough system that once connected Pitt Lake with the Pitt, Alouette, and Fraser Rivers (Spurgeon 2001). These Coast Salish visitors—who love wapato too!—arrive in nearly full canoes following the salmon-fishing season, but are anticipating trade for mountain goat (*Oreamnos americanus*) wool, sturgeon, Sphagnum moss (*Sphagnum* spp.), and wetland plant foods (Duff 1952: 74). Katzie chiefs formally receive the party in their regalia; the guests raise their paddles in recognition and greeting.

The broad suite of trade items draws our attention to the role of proto-Katzie women and men in both resource management and the maintenance of broad social networks. Women figure prominently in Katzie origin stories about the production and ownership of valued resources, which in Coast Salish societies tie directly to wealth and social status (Jenness 1955). The relationship between women and plants is longstanding in traditional societies, and we are confident that ancient Katzie women would have been largely responsible, then as later, for both managing and potentially trading some of the community's most valuable resources, such as bog cranberries and wapato. Resource areas in historical times were carefully managed by Katzie chiefs, and access, though rarely denied, was controlled. These chiefs understood full well that playing the host today meant playing the guest tomorrow and that having oversight of these resources was status enough (Suttles 1955: 27).

Figure 6. Visitors welcomed by Katzie dignitaries to the DhRp-52 village

Figure 7 places us inside a substantial pithouse, in the warm smoky atmosphere where trade has just completed. Family heads have engaged in animated haggling, finally agreeing on suitable prices for the exchange of goods to fill their larders and craft their manufactures through the winter. The price may have been beads, abalone, or saltwater shellfish—as these were among the very few resources Katzie did not have at their doorstep (Suttles 1955). With the work done, feasting begins. On the menu are roasted meat, fish, and wapato flavoured with berries, wild herbs, and oil. Children play; families sit back to visit and eat. Thanks will later be given by placing food and blankets into the fire. Speeches will be given, and histories will be told late into the night.

At DhRp-52, we see evidence for intense processing activities likely related to ritual and feasting. The excavated portion of the enormous pit that dominates the east side of the site during the Middle and Late Components was filled with 12 tons of fire-cracked-rock (FCR) and its periphery lined with several thousand stone disc beads (Hoffmann 2010; Hoffmann et al. 2016). Many more thousands of beads were recovered solely from deposits dating to the era associated with garden manufacture and use. Throughout other areas of the site, clusters of stone beads are found next to equally dense concentrations of FCR, including the central hearth of the pithouse. Though the beads show few signs of having been

Figure 7. Feasting and exchange in the sqémél (pithouse) at DhRp-52

burned, their position relative to the FCR may indicate feasting and trading activities were co-occurring (cf. Coupland et al. 2016; Hoffmann 2010).

As purveyors of a number of valuable commodities, including wapato, it is possible that the inhabitants of DhRp-52 were considered to be of high political and spiritual status. Feasting is an important element of early agricultural societies, serving as a mechanism to enforce social norms and validate political inequalities (cf. Dietler and Hayden 2001; Twiss 2008). As with the potlatching known to exist in later generations (Boas 2002: 132), feasting could have been an important aspect of social life, and acted as one avenue through which the inhabitants both gained and retained social status. The FCR concentrations and other thermal features may have been roasting pits used to prepare foods for feasting or other social activities. If some nascent form of social and political inequalities were present at DhRp-52, it would be a marked departure from what we know of mid-Holocene societies on the Northwest Coast (Coupland et al. 2016; Moss 2011).

Falling Action

We now enter the slow descent of our plot line. But lest we leave the garden thinking it was always perfectly idyllic, we must introduce some tricksters and bad guys, at least in a cursory way. Undoubtedly the garden was engineered and maintained based on very sound and sustainable principles for at least 700 years. But all communities have their upstanding and suspect members and this one would have been no exception. Coast Salish stories are full of the cahoots of trickster figures flamboyantly sporting bad behaviour, making terrible choices (in friends, travel plans, foods consumed, sex partners, etc.), and (sometimes) finding redemption (Archibald 2008; Boas 2002: 89–132; also Ballinger 2000; Ellis 1993). The wapato garden, and the site itself, were abandoned circa 3200 cal B.P. Was this because of rising or falling water levels, the natural attrition of the resource, faulty or far-sighted vision? We do not (yet) know, but we do know that the careful (and loving) attention to the garden's hydrology that had made its long tenure possible ceased. As a result, the garden patch dried up and acidified, and eventually become a lower-energy fen-like wetland, whose mucky peat deposits would ultimately preserve the remains of the garden through subsequent millennia (Hoffman et al. 2016). Some truly maligned bad guys—as in certain colonial administrators—and their more benign but badly guided followers would dyke and destroy most of the wapato habitat in the Fraser Delta in the late 19th and 20th centuries, among a host of other disruptive and damaging behaviours (Garibaldi and Turner 2004; Harris and Demerritt 1997). DhRp-52 was (fortuitously) buried under mounds of fill in a farmer's field waiting to be re-found by Katzie archaeologists in 2006. Only eleven percent (>1600 m^2) of this site, which was impacted by the road, was excavated, and today, a small remnant lays next to the roadway leading to the Golden Ears Bridge (Hoffmann 2017a).

Ending

As the end comes in sight for DhRp-52, all is not lost for 'Katzie and the Wapato'. Like all good love stories, this one endures, holding in its ending the seeds (tubers?) of new beginnings. Here we find different varieties of resolution. For one thing, the proto-Coast Salish ancestors who built, sustained, and inhabited DhRp-52 clearly took their knowledge of wapato production with them, sharing it with other communities, and reproducing it themselves. In the early historical era, wapato was still intensively managed (for all intents and purposes 'farmed'; Lyons et al., forthcoming) by

the Katzie as well as by Chinookan communities of the Lower Columbia (Darby 2005; Suttles 1955).

For another thing, this story gives us a chance to talk about love. Love is not a usual prime mover in archaeological theory and practice, yet it is one of the most common emotions people name to explain their individual and collective actions. From an historical and archaeological perspective, people have lived and loved through the ages. Why, then, is love a taboo subject in the social sciences? Some scholars have made forays into these relatively untested waters. Feminist, queer, and indigenous scholars have asserted that research embodies the whole person, including mind, body, spirit, and heart, and have developed programs of practice around this belief (e.g. Anzaldúa and Keating 2002; Archibald 2008; Butler 1993; Conkey 2005; Wilson 2008). Archaeologists, predominantly women, have touched on issues of the heart in relation to emotion, embodiment, sexuality, and memory (e.g. Ireland and Lydon 2016; Joyce 2006; Perry 2017; Tarlow 2000; Voss 2008). And an emerging movement in archaeology is charting a pathway towards heart-centred practices that explore elements of care and humility and vulnerability, spirit and relationality and story-work, in our research (e.g. Atalay 2017; Hoffmann 2017b; Supernant and Lyons 2017).

The re-discovery of DhRp-52 opened a vast well of emotion, enthusiasm, and purpose in the Katzie community. Over seventy Katzie members were involved in the massive 2-year open-area excavations and subsequent 3 years of analyses and reporting (Hoffmann 2010, 2017a). Young Katzie were especially impressed by the status, ingenuity, and capability of their ancient relations. The knowledge gained from the excavations and analyses renewed what community members already knew and felt about wapato in a very fundamental way. Building on this interest, an eco-cultural restoration plan has been developed by Katzie and work has begun to implement it, including experimental research on wapato cultivation (Katzie First Nation 2017).

Wapato, though broadly known in the Katzie community before the finding of DhRp-52, has gained a much broader significance, as a kind of currency for love and identity and hope for the future. Katzie First Nation Chief and Council observed that the publication of our results in *Science Advances* (Hoffmann et al. 2016) has been game-changing with respect to how Katzie regard themselves and are regarded by the government negotiators, business developers, resource managers, and many other interest groups pursuing relationships with Katzie leadership. Both the story of and knowledge from DhRp-52 is being effectively used to counter ongoing stereotypes and misperceptions of settler peoples towards First Nations by both asserting and demonstrating that contemporary Katzie people are descended from prosperous and resilient ancestors who successfully managed

the abundant resources of their lands and waterways from time immemorial and are continuing to learn from and apply these principles in the present.

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Compliance with Ethical Standards

Conflict of interest This study was funded by the South Coast British Columbia Transportation Authority. The authors declare that they have no conflict of interest.

Notes

1. We use the term 'farming' here in a vernacular sense to mean any concerted form of plant food production. In the case of ancient and historical Indigenous communities of Western North America, these resources were predominantly wild but could be considered cultural or economic domesticates (Garibaldi and Turner 2004; Turner 2014; Zvelebil 1993). Interestingly, evidence for the development of a 'crop complex' existed in southeastern North America at 3800 BP, the date of first establishment of the wapato garden; maize agriculture would not emerge for at least another 1200 years (Smith and Yarnell 2009; and see Simon 2017).
2. On anthropological approaches to the question of wild plant food cultivation in what have been called 'mid-range societies' that occupy a socioeconomic space between foragers and farmers, see Anderson (1997), Arnold et al. (2016), Ford (1985), Smith (2005, 2007) and Zvelebil (1993).

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