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Reweaving urban water-community relations: Creative, participatory river "daylighting" and local hydrocitizenship

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Framed by questions about "hydrocitizenship" in the 21st century, this co-produced, interdisciplinary arts and humanities-centred research explores the (re) weaving of local knowledges, experiences, perceptions, and values of water and place through the concept, process, and practice of "daylighting hidden rivers." Located at the nexus of three theoretical frames – "participation," "hydrocitizenship," and "daylighting," it engages reflexively with strong and weak "hydrocitizenship" and with paradigms of "daylighting." Working with diverse communities and organisations in South Bristol (UK), this eco-social research project discovered community concerns and needs, and positioned itself in relation to these in co-production. This involved older people, children, and professional stakeholders in a place-specific, "catchment" setting, using novel arts-led, creative, narrative mapping processes. We critically examined the value, opportunities, and tensions of this multi-method approach to people's past, present, and future connections and relationships with their local (water) environment, their senses of self and community. Our iterative processes of seeking out "lesser heard" voices were conceived and played out around a braided cascade of "openings": emerging, connecting, enacting, imagining, and reflecting. Thinking critically about our oblique, emergent processes, we identify 15 "top tips" concerning the creative participatory daylighting of lay knowledges and values, and "river visioning." These can inform co-working with communities to enable and empower citizen engagement with places and local water issues for resilient futures. Our findings contribute new understandings of "hydrocitizenship" and creative participatory "daylighting" in combination, when urban spaces are construed as "water cities," cascading both water and narratives. Importantly, our co-production processes with lesser heard groups also exemplify "higher-order participation" in co-visioning resilient futures, with all the messiness, complexity, and conflicts exposed.

KEYWORDS
children, co-production, daylighting, hydrocitizenship, interdisciplinary, participatory mapping

1 | INTRODUCTION: EXPLORING THE HEADWATERS

Active citizen participation is recognised as critical for effective local care of the environment in an era of climate change and population pressure. Individuals *can* connect to other people and ecology through water (Jacobs et al., 2016; Turnhout et al., 2010), as in the US EPA's "Urban Waters" mission.[1] Here "partnership" aims to:

> Revitalize urban waters and the communities that surround them, transforming overlooked assets into treasured centerpieces and drivers of urban revival.

But achieving participatory water management that fosters care, stewardship, and responsibility requires innovative inter-disciplinary, multi-stakeholder thinking about (water) citizenship and its goals, in complex social-ecological settings (Von Korff et al., 2012). Consequently, the project discussed here reflects on processes shaped by interdisciplinary, participatory arts and humanities research, transdisciplinarity, and creative practice, within the "Towards hydrocitizenship" project.[2] These aimed at (re)connecting people with each other, and to water.

We know that while effective ongoing participation is increasingly required in governance processes for local decision-making (EC Water Framework Directive2000; UK Government's Civil Society Strategy, 2018; UK Localism Act, 2011), achieving this is not straightforward. This is even harder in "austerity," when formal systems are challenged to deliver necessary local social/environmental care, with citizens needing to be empowered and enabled with senses of responsibility (Bickerstaff et al., 2008). Also, participation needs to be "meaningful" (Arnstein, 1969; Collins & Ison, 2009; Cook et al., 2013), with barriers arising from both circumstances and framing (Facer & Enright, 2016; Norris & MacLean, 2011).

One barrier to participatory water governance is that 21st century UK urban residents feel disconnected from their local water environment due to a historical legacy of hidden water infrastructure within contemporary management and urban planning. Hoolahan suggests that addressing this requires "making visible and material changes to how water in the home connects to water in the environment," noting opportunities with "urban daylighting" as giving "presence to water in society" (2017, n.p.). "Normal" catchment management, with its embedded power hierarchies, prioritising of specialist science, and limited constituencies involved in knowledge production, persists in care of water assets, despite the participatory turn (Cook et al., 2013, p. 754; Lane et al., 2011). Acknowledged value, however, exists in bringing science and lay knowledge together in building collective capital for local decision-making (Callon, 1999; Landström et al., 2011; Whatmore, 2009). Increasingly water and rivers are recognised as essential to senses of place and belonging, and in building community resilience (social, cultural, environmental) to different stresses, including climate change (McEwen et al., 2016; Strang, 2013). Clearly evidence about rivers and other water bodies, and human interactions with them, is also in the vernacular as "water stories" that circulate or otherwise in "Water Cities."

In rethinking participatory processes that aim to involve all citizens and their local knowledges, we can draw on co-productive principles from community-based participatory research (Durham Community Research Team, 2011). These take greater account of issues of power, rights, responsibilities, and roles of all stakeholders, based on respect for, and partnership with, community members. While the arts and humanities offer new creative ways to collaborate with, and engage, citizens (Holm et al., 2015), previous arts-based, research practice focused on people's water relations has tended (at least initially) to address a specific issue, e.g., river flooding (Multi-story water project[3]; Peek et al., 2016). Our earlier research found that a single focus could miss or obscure complexities and contradictions of people, communities, places, and their interactions.

Using the concept, process, and practice of "daylighting hidden rivers," we researched how this more oblique framing might facilitate new understandings of how citizens and "local communities" are embedded in the hydrosphere. Here we integrate concern for the physical, virtual, and social. Our paper addresses three questions:

1. How can a creative participatory, locally embedded, enviro-socially focused, arts-based research process develop new understandings of water (hydro)citizenship and knowledge processes that promote citizen empowerment and action?
2. How can such a "daylighting" process bring new or "lesser heard" voices into intergenerational conversations about (re)connections between self, water, people, and place?
3. How might this surfacing of local knowledge, skills, and attitudes/emotions support transitions from "disregard for place" associated with hidden rivers to more sustainable relationships with renewed urban watercourses?

Here we hope to interest those engaging and empowering "hidden" or "lesser heard" citizens to connect with people, places, local environmental care issues, and in building water relationships for climate resilience. Our team involved lead

academic/academic researchers, a core community partner, a postdoctoral researcher, local governance actors in flooding/water quality, creative consultants, a community enabler, and an artist. Team expertise included socially engaged arts practice, water resource/risk management, cultural geography, and community engagement. This paper is outcome of collaborative reflective writing involving social, hazard, and arts researchers, and an artist.

2 | BACKGROUND FRAMING

Our emergent research processes brought different understandings of "meaningful participation" together with explorations in what "enactment of hydrocitizenship" and "daylighting hidden rivers" might mean as research framings. We then aspired to innovatively braid these within socially engaged arts practice (see section 3 on methods).

2.1 | From citizenship to hydrocitizenship

While researching "playing an active part in society" has longer term resonance, we explored what is gained by viewing citizenship through the lens of water and vice versa. Growing interest exists in the meanings of "environmental," "ecological" citizenship as non-contractual, bridging public and private domains – unlinked to political affiliation (cf. Dobson, 2003, 2007; Humphreys, 2009). Taking "water"/"hydro" citizenship (Nye et al., 2011) as a key subset of relationships between democracy, citizenship, and their confluence with environmental challenges and inequalities requires open, flexible understanding of key concepts. This allows possible mutation in a tensioned space between "hard" and "soft" enactments of hydrocitizenship, discussed below.

However, this also necessitates certain conceptual restraints. The (ultimately) utopian potential of a "strong" enactment of hydrocitizenship is predicated on citizenship as "membership in a community" (including the non-human) or "the quality of an individual's response to membership in a community." This rests on presupposing that the right to water underpins a new, expanded sense of ecological "citizenship" (Martinsson & Lundqvist, 2010). As a commons shared by all living entities, water equates to air as understood by philosopher/activist Abram (1997), exceeding all assumptions of human exceptionalism.[4] A "strong" enactment of hydrocitizenship would, therefore, be genuinely radical, "flattening" implicit hierarchies enacted in social action, thought, culture, and nature that privilege the human over non-human others (i.e., animals/plants). If a common dependency on, and participation in, a relationality predicated on access to water and participation in its cycles is the lived basis of hydrocitizenship, then that citizenship extends to all living beings.

Any attempt to enact a "strong" sense of hydrocitizenship within academic research, while theoretically consistent with recent academic positions across various fields (e.g., Abram, 1997; De Castro, 2015; Haraway, 2003, 2016; Kohn, 2013; Latour, 2004, 2013; Silverman, 2009), would be highly problematic given institutional complicity in what Amitav Ghosh refers to as "the Great Derangement" (2017). In short, inherent presuppositions of human exceptionalism within the dominant culture effectively place "strong" hydrocitizenship "off limits" except as a theoretical position. However, maintaining awareness of the potential of such a "strong" enactment must remain as an "impossible" ideal. Weak enactments of hydrocitizenship are "weak" in the sense that their practice only tacitly questions underlying presuppositions and hierarchies. Their focus instead is on animating better human stewardship of water, and its connecting people, places, and water. Our research is presented in this context.

2.2 | Paradigms of "daylighting" the hidden

How might thinking about "enactments of hydrocitizenship" link to philosophies and practices of "daylighting"? First cited in 1970s river management literature, notions of "daylighting" challenge the traditional engineering paradigm of "controlling nature." They involved culverting urban rivers for flood control and hiding (polluted) watercourses from urban dwellers. Over the past 20 years, "daylighting" has become an international movement involving de-culverting underground watercourses (Broadhead & Lerner, 2013; Kaufman, 2013), primarily focused on river restoration/rehabilitation.

More recently, the concept and processes of "daylighting" have extended beyond flood risk management. They now embrace wide-ranging, multiple social benefits/ecosystem services in de-culverting, recognising aesthetic beautification, recreational, health/wellbeing, and environmental benefits of urban rivers, for human and non-human "stakeholders" (Wild et al., 2011). Social "daylighting" agendas aim to rethink urban rivers (as "rivertowns"; Kibel, 2007), "breathing life" into both streams and communities (American Rivers, undated). Ideas of "daylighting" now appear globally in urban river regeneration at contrasting scales (e.g., Saw Mill River, New York; Porter Brook, Sheffield) and diverse cultural settings

(e.g., Japan, New Zealand). "Participation" and citizen engagement are more frequently included in its strategies, processes, and practices, in a move from "informing" to "citizen control." Local citizens are increasingly involved in co-working, and politically as lead proponents/activists in campaigning for their local watercourse. This recognises "daylighting" as "having a new vision about rivers in the city" (Lost Rivers, 2012, n.p.).[5]

Previous "engagements" around local river "daylighting" have tended to be limited in their exploration of roles for creative arts practices beyond permanent or transient marking of former river courses or risk zones in urban landscapes or through windows revealing culverted rivers below. The "Ghost Arroyos" installation, for example, revealed forgotten, invisible waterways of San Francisco.[6] However, projects exist that suggest how socially engaged artists can work with local communities to address what might broadly be called "daylighting issues." For example, Lillian Ball, a New York-based artist/environmental activist, has undertaken projects such as WATERWASH[TM]-ing, which she identifies as involving "creative consulting, educational outreach, and cultural services relating to water quality improvement, wetland habitat restoration, and stormwater remediation."[7] By extending ideas of social "daylighting," these ask how might creative participatory "daylighting" concerned with surfacing "the hidden" or "less heard" in demographic, cultural, and environmental justice terms expand current senses of ecological and hydrocitizenship? Recognising people's complex relationships and holistic interactions with water, we adopted a methodological approach in our research that included interpretations of water as a source of health, comfort, and identity, as well as life, livelihood, and risk. Throughout, we aspired to connect and empower people, allowing our research to flow along different braids opened by individuals' participation with their own interests, practices, processes, and backgrounds.

3 | LOCATION AND OUR EMERGENT METHODS

Methodologically, we took inspiration from, and blended aspects of, participatory action research (PAR1; Kindon et al., 2007) and practice as research (PAR2; e.g., Mcniff, 2013). Pain observes that participatory processes generate knowledge particular to their process and participants rather than surfacing local knowledge, and that PAR1 "encourages and enables the drawing of multiple connections between issues and processes at different scales" (2004, p. 653). PAR2 is considered within section 3.3 which discusses the artist's methods. First, we outline our case-study location.

3.1 | South Bristol as case study: tales of two rivers

Bristol, a UK city with over 400,000 inhabitants, has diverse interactions with water (see *Big Blue Map of Bristol*).[8] Our research focused on Bristol south of "New Cut" (Figure 1), in areas recently gentrified or currently gentrifying. One Southville ward is in the most deprived 10% in England (Multiple Index of Deprivation, 2015).[9] In the physical landscape, tributaries to the Bristol Avon, Colliter's Brook and the Malago rise from springs on the north side of Dundry Hill (Bristol/Somerset border). These steep catchments respond rapidly to rainfall. Colliter's Brook has documented flooding back to the 18th century (Environment Agency, personal communication); the Malago has sparser records. Summer convective storms in July 1968 generated the most severe river floods in older residents' memory but outside the experiences of younger and newer residents. Complex local flood histories led to incremental defensive culverting of the rivers' lower reaches. Early OS maps (1916) show Colliter's Brook with an unconstrained, sinuous course, while the Malago's industrial heritage led to large hidden, culverted stretches. Knowledge of past flood impacts and technical interventions is recorded within formal archives (e.g., Bristol Avon River Authority, 1968) but with limited public accessibility.[10]

Both catchments have legacies of extensive change, particularly upstream on Colliter's Brook. Memories of local manufacturing or heavier industry are now restricted to older generations. However, a national developer undertook a regeneration initiative along the lower Malago during our research timeline. This contentious proposed development increased the height of local tower blocks, and sited a power station by a city farm.

3.2 | Developing the participatory "daylighting" process

We knew of ongoing efforts to de-culvert parts of Bristol's covered rivers, including the River Frome and multiple smaller tributaries, from underground waterways plotted on the *Big Blue Map*.[8] Despite numerous decades-long conversations about "daylighting" rivers under the city centre, all plans were ultimately abandoned due to cost or loss of development space for roads/buildings. In South Bristol, Friends of Greville Smyth Park (FroGS) community group was interested in possibilities of "daylighting" areas of Colliter's Brook for wildlife. Our project met that discussion, seeking to develop it in co-production. This involved working with individuals, local community development organisations, community/local activism
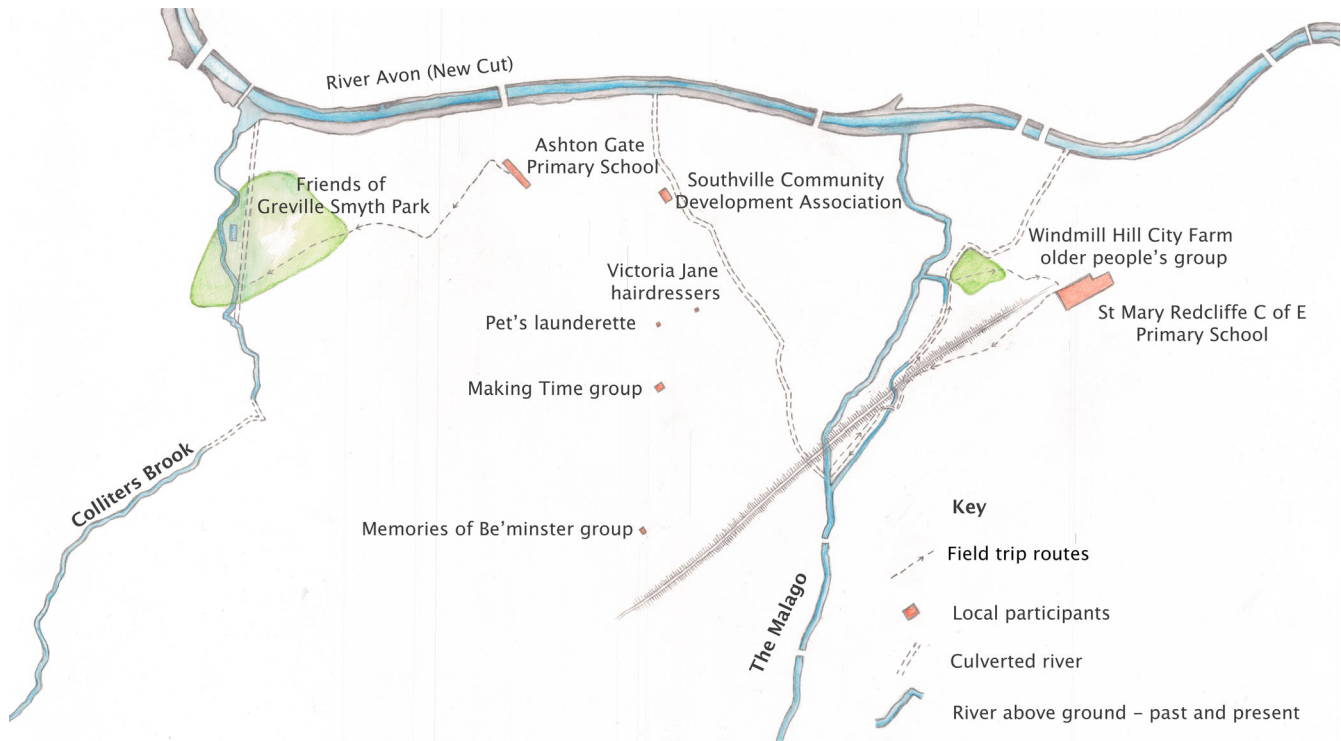
FIGURE 1 Map of participating groups and watercourses (Luci Gorell Barnes).

groups, local government's flood risk/asset management and climate adaptation teams, environmental regulator, a resilience NGO, and a community farm to establish concerns and needs. We adopted open, plural understandings of "communities" in South Bristol, and captured stories (historic, contemporary, future) through conversations and listening. This involved linking, sharing, challenging, and embellishing stories, and planting new "narrative seeds." We also broadened understandings of "daylighting" to include the social metaphor of changing relationships with neglected river stretches by the people and areas through which they flow, and for "changing communities."

Early conversations with the local community development association about water as a means of exploring and potentially healing local social disconnections identified FroGS' "daylighting" proposal, but also opposition due to associated loss of football pitches. These discussions also surfaced initial "problems" that informed our selection of case-study communities in South Bristol. An emergent, repeated water story was that of the culverted Colliter's Brook, running hidden underneath a local park, and perceived disconnection of different resident groups bordering it. This included older established residents and children of affluent young families who had moved into the area during gentrification. Contributing elements involved: regeneration of old industrial areas, rising house prices excluding local people, social isolation, and tensions between locals and respectively, students and small percentages of (mainly Eastern European and Somali) immigrants in the area.

Our methodology involved community enabling, participatory mapping, and participant observation in an emergent process cascade lasting 29 months. The participatory "daylighting" was led by different players in its weave through our research process (Figure 2), with participating groups and watercourses mapped (Figure 1). Helen, a locally embedded community enabler, encouraged, empowered, and facilitated people to be active participants. Helen was "expert in her local region," "grounded in river lore" (Helen). Living locally, she had direct knowledge of local community groups and their needs, skill in developing local relationships, and experience in delivering rivers-based, socially engaged projects (notably the South Bristol Riverscapes Project). By avoiding the distance and externality of involving outside specialists, Helen facilitated continuity, sustainability, and legacy of processes and outcomes.

Our creative participatory practices with these groups involved "deep mapping" or the "*mapping* or *tapping* of a layered and multifaceted sense of place, narrative, history and memory" (Roberts, 2016, p. 1). This provided "ways in" for communities by reflecting existing understandings, and for facilitating new affective relations/possibilities. We recognised early a need to set aside generalisations about disconnections between generations. Many older people had children, grandchildren, great grandchildren. Our initial work involved developing understandings of group dynamics in older people, their histories

Participatory process

The project emerges through researchers' existing interests, social and cultural needs, consultations with stakeholders, and awareness of wider policy setting.

Through the bidding process the project terrain begins to be conceived, drawn and redrawn.

Community enablers and artists with hybrid skills and knowledges are identified and brought on board.
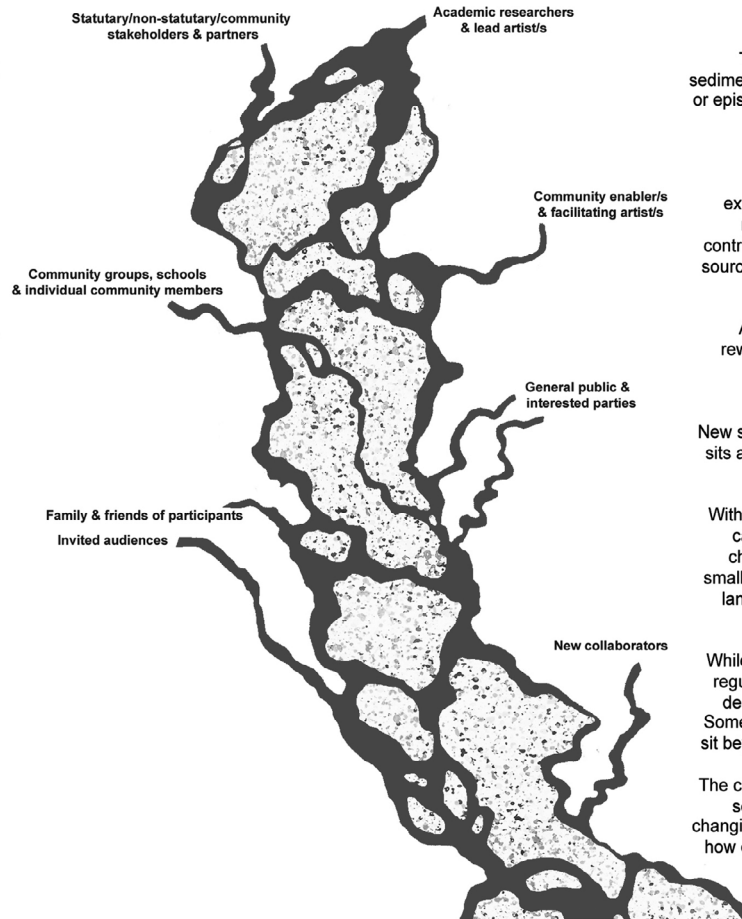
The project becomes more connective as the practitioners identify groups and individuals in the community and initiate work with them.

The process of having creative conversations is full of unknown and unforeseeable currents. As each new story/experience is heard, participants' relationships with the river are reworked, and thoughts and memories that have been latent for some time are brought to light.

New ideas and knowledges come to the surface and the creative methods being used are revised and reworked accordingly.

In this fluid process some things sink back to the bottom or are lost into the system, whilst others are buoyant and point the way to how things could be in the future.

New connections and possibilities come to the surface and the structure and potential of the community changes.

Statutary/non-statutary/community stakeholders & partners

Academic researchers & lead artist/s

Community enabler/s & facilitating artist/s

Community groups, schools & individual community members

General public & interested parties

Family & friends of participants
Invited audiences

New collaborators

Braiding rivers

The headwaters gather rainfall and sediment with inputs that can be constant or episodic, feeding the upper reaches of the river.

In the middle reaches, tributaries confluence with the mainstream expanding its flow and its load as the river progresses downstream. This contributes new sediment from different sources and increases the river's power to rework and refresh.

As each new 'flow' enters, the river reworks its braids and sediments that have not moved for some time are disturbed.

New sediment comes to the surface and sits above the flow, and the structure of the river changes.

With large inflows (floods), the braiding can be significantly disrupted; some changes can have persistence. With smaller inflows, the changes in the river landscape can be more transient and subtle.

While surface sediments churn and are regularly reworked, older sediments at depth get reworked only episodically. Some others (larger, older, deeper) can sit beyond the reach of the current river.

The channel continues to avulse, mixing sediment, making new connections, changing how the braiding manifests and how different parts inter-relate and feed each other.

FIGURE 2 The research process as a braided river – with headwaters, new currents, upwellings, eddies, ebbs, and flows.

and memories of their locale and also the schools, the children, and their lives and lifestyles. Maintaining dialogue with community partners was critical, involving them in participatory processes wherever possible.

As a result of our reflections on possible engagements, a Bristol-based participatory community artist, Luci, joined the research team a third of the way into the research.[11] This allowed us to tailor creative practices to the specificities of the research setting by using Luci's expertise in developing narrative, or deep, mapping processes that enable participants to evoke senses of citizenship in their neighbourhoods. Our processes then became more artist-led within their initial physical and social frame, exploring people's relationships with place through creative, participatory, narrative/deep mapping sessions. Luci's collaborative drawing approach using handmade and digital mapmaking evoked participants' stories, oral histories, memories, ideas, and perspectives about their local neighbourhoods and waterways, and water (dis)connections. This recognised that people's portrayal of lived experience is not always best expressed in words (Bagnoli, 2009; Guenette & Marshall, 2009). Embodied acts can open powerful channels between inner and outer realities, allowing new observations of the world and our position in it.

We worked with groups at either end of the age spectrum: primary school children and their teachers, and retired older, local community members. This involved identifying older people's groups – their days of availability and local connections – and two local primary schools based on proximity to the rivers and willingness to collaborate. We linked and worked with three local older people's groups whose participant ages ranged from 60 to 101 years. "Memories of Bedminster" (c. 30 participants) had an educational feel, with a seated audience facing a speaker; "Making Time" (c. 10 participants) met around a table with art materials; and "Windmill Hill City Farm Older People's Group" (c. 14 participants) had a social atmosphere with people seated around a large table with food. We met each group two to six times (totalling 11 participatory sessions) over a four-month period, focusing explicitly on the two local rivers and roles they had played in people's lives.

Our school engagements involved work with 60 children aged 10/11 years (three sessions with two classes, totalling six) at Ashton Gate Primary, situated close to Colliter's Brook culverted beneath Greville Smyth Park. In St Mary Redcliffe Primary School, close to the River Malago, we worked with 60 children aged 9/10 years (four sessions with two classes plus presentation, totalling nine). Our engagement at the beginning of their academic year allowed us to follow through with their ideas, developing their work in more detailed ways.

The academic researchers acted as participant observers within the arts process, recording interactions and contributing critical reflections as individuals and a group. Luci captured her thoughts on the creative participatory processes within three volumes of project journals. This method represented work-in-progress, being in part auto-ethnographic. Helen provided summative reflection in writing on her positionality and processes. Formative and summative reflections from participants were interwoven within the participatory "daylighting" process – through focus groups with older people (one) and children (three), and through interviews with teachers (two) and organisation professionals (five), to gain their insights on the process. These activities were audio-recorded and transcribed, with responses thematically coded and analysed. Referenced quotes are used in our narrative to illustrate various points made. Ethics clearance was obtained for working with human participants.

3.3 | Developing artist-led research processes as a socially engaged practitioner

The "Towards Hydrocitizenship" project was committed to making arts-based or -led research central, rather than inviting artists to provide some specific interpretation or output of completed research. Our process involved co-working between arts-practitioner, community enabler, and postdoctoral researcher. All the community-engaged research led by Luci was conducted collaboratively. Allowing processes sensitive to her creative needs and some freedom of expression at times unsettled all involved. For the researchers, it involved relinquishing substantial control of research processes, allowing emergence and creativity. This also provided some significant advantages over more traditional social research, putting participants centrally in our processes. We now reflect on the artist's process as "practice as research" (PAR2), and on what we learned from collaborating. Luci shares:

> My practice draws on action research methodologies to develop practical knowing for positive social change; as Brydon-Miller et al. (2003) suggest, commitment to bring about change is integral to the research act. I use conversational models of knowledge production in which people are subjects rather than objects of research, and aim to provide people with support and resources to do things in ways that fit their own cultural context and concerns. My practice values tacit and vernacular knowledges, and addresses tensions between performative and discursive approaches to knowledge production. It draws on ideas in human geography, which see environment as playing a crucial role in our narratives and identities.

> 'Deep mapping' is a process that understands a place through different people's relationships with it, bringing together diverse voices, information, impressions, and perspectives of particular environments. Rather than seeking representation and repetition, deep mapping values what McLucas (undated, n.p.) describes as an evocation of a site, involving 'negotiation and contestation over who and what is represented and how.' This allows differences to co-exist, often giving voice to previously unheard opinions and ideas. Environment plays a crucial role in our narratives, and therefore our identities (Baynham, 2003; Cameron, 2012; Chase, 2005), and using creative methods can enable participants to access and represent previously unexpressed perceptions (Bagnoli, 2009).

4 | PARTICIPATORY "DAYLIGHTING" PROCESSES: BRAIDING AND (RE)WORKING

We now present narratives of our participatory daylighting process as a "cascade," working with the metaphor of physical river "braiding." This is conceived as a series of "upwellings," "openings," and "re-openings": emerging, connecting, enacting, imagining, and reflecting (Figure 2). From older people, we move on to primary school children, and then to interactions between them, and with other stakeholders in the local governance environment. We interweave this with evaluation of their experiences of being involved, alongside 15 "top tips" (Table 1), as critically reflective distillations of our ethos/approach. Throughout, we explore how participatory narrative mapping talks to participatory daylighting and hydrocitizenship as practice.

4.1 | Emergence and connecting: deep mapping work with older people

On connecting with older people, Luci introduced the theme of "rivers" immediately, aiming to reveal specific memories about people's local waterways, which often meandered into other stories. Different group dynamics (by gender; focus on social vs. reminiscence; numbers) influenced the sharing. Fifteen made maps of their personal landmarks (Figure 3a–c). Some older participants were reluctant to draw, maybe due to degenerating motor skills or perceived challenge of the task:

> In your mind it's this big and then you have got this little piece of paper and you can't fit in all the destinations in there. (Focus group)

TABLE 1 Fifteen "top tips" for creative participatory daylighting

Phase/s[a] or openings	Stage of process	Theme	Ethos or approach
Connecting/ imagining	Bidding process. Consulting with stakeholders. Identifying the team (researchers, artist, community enabler, etc.). Identify local groups and individuals to work with.	Value others	1 "Make creative partners": meet with key people, e.g., stakeholders, teaching and support staff to negotiate a mutually agreed starting point.
Connecting/ enacting	Preparing for participatory sessions.	Value resources	2. "Go shopping": source good quality materials that you would enjoy using yourself and don't forget to bring biscuits. 3. "Find your lab/studio/work/play space": identify welcoming and accessible spaces to meet and work in.
Connecting/ enacting	Introducing and initiating participatory sessions with local participants.	Value obliqueness	4. "Work with what is": place participants at centre of the process by listening to the local knowledge experiences and opinions of your participants. Enable participants to say what matters to them, however minor it may seem to you. 5. "Show your underbelly": allow participants see some of your vulnerable, subtle, and individual self. 6. "Use small asks": offer people achievable and accessible creative tasks.
Enacting/ connecting	Developing participatory sessions following participants' interests and concerns. Taking up any introductions to new participants.	Value fluidity	7. "Let it bubble over": try to enjoy the mess. 8. "Notice what has been done": highlight participants' work and say what you find interesting, enjoyable, and exciting about it. 9. "Strength draws strength": discover and work with people's strengths and interests.
Enacting/ imagining	Collecting and labelling all incoming contributions. Adding your own thoughts, feelings, insights and ideas to the mix.	Value instinct	10. "Follow your nose": allow things to develop out of one another: build on work that has been done and see where it leads. 11. "Let yourself be lost": allow yourself to be unsettled and trust the experience of not knowing exactly what you are doing.
Imagining/ connecting	Bringing participants' contributions together to present to them and others.	Value co-creation	12. "It's not just yours": make sure participants maintain ownership of their own ideas and opinions. 13. "Be multi-voiced": allow different voices to be heard and new audiences to listen.
Connecting/ enacting	Documenting and sharing ideas throughout the process.	Value transparency	14. "Keep a project journal": record the process using text, photographs and drawn images. Include your thoughts and feelings about how things are going. Add things as they occur to you – even if they seem tangential to the process. 15. "Share your process": have project journals available for participants, researchers, stakeholders, etc. to look at and discuss.

[a]Reflecting and emerging phases run throughout whole process.

Luci anticipated this reluctance, bringing along objects she hoped would be evocative – including wooden laundry tongs and an old toy twin-tub. These prompted conversations about laundry and wider water behaviours that participants later described as "very stimulating":

It reminded me of my childhood … we actually lived in the Malago when we were little … it reminded me of my mum when she used to do the washing … the lady next door used to pass her water over. It was hard going to do hot water, for her to start her washing after she had done her own … I just loved being reminded. (Focus group)

Contemporary and historic maps played pivotal roles in these conversations, as starting points for rehearsing memories, in helping to make geographical and other connections over time and place, and as receptacles for stories told. We modified our approach to collect these stories and memories, and map them as a tool to elicit further stories, corroborating or challenging other stories or adding new ones. Our intention was to build up subjective individual, as well as collective, senses of place, both past and present. The Memories of Bedminster group indicated that they had "enjoyed" being shown their memories located on a large map (Figure 3d–e); several participants describing this as "clever":

Sometimes smaller conversations expanded to involve the whole group, with water memories passed around and re-workings constructed and negotiated. Many memories focused around pivotal local moments, the most dramatic being the July 1968 floods in South Bristol, with houses "flooded up to the picture rails." Many participants knew their exact location and what they were doing when these floods struck, with flood memories that had amalgamated over time, (re)worked together to become a shared collective story. Betty talked about working overtime in the florist making wreaths for "the
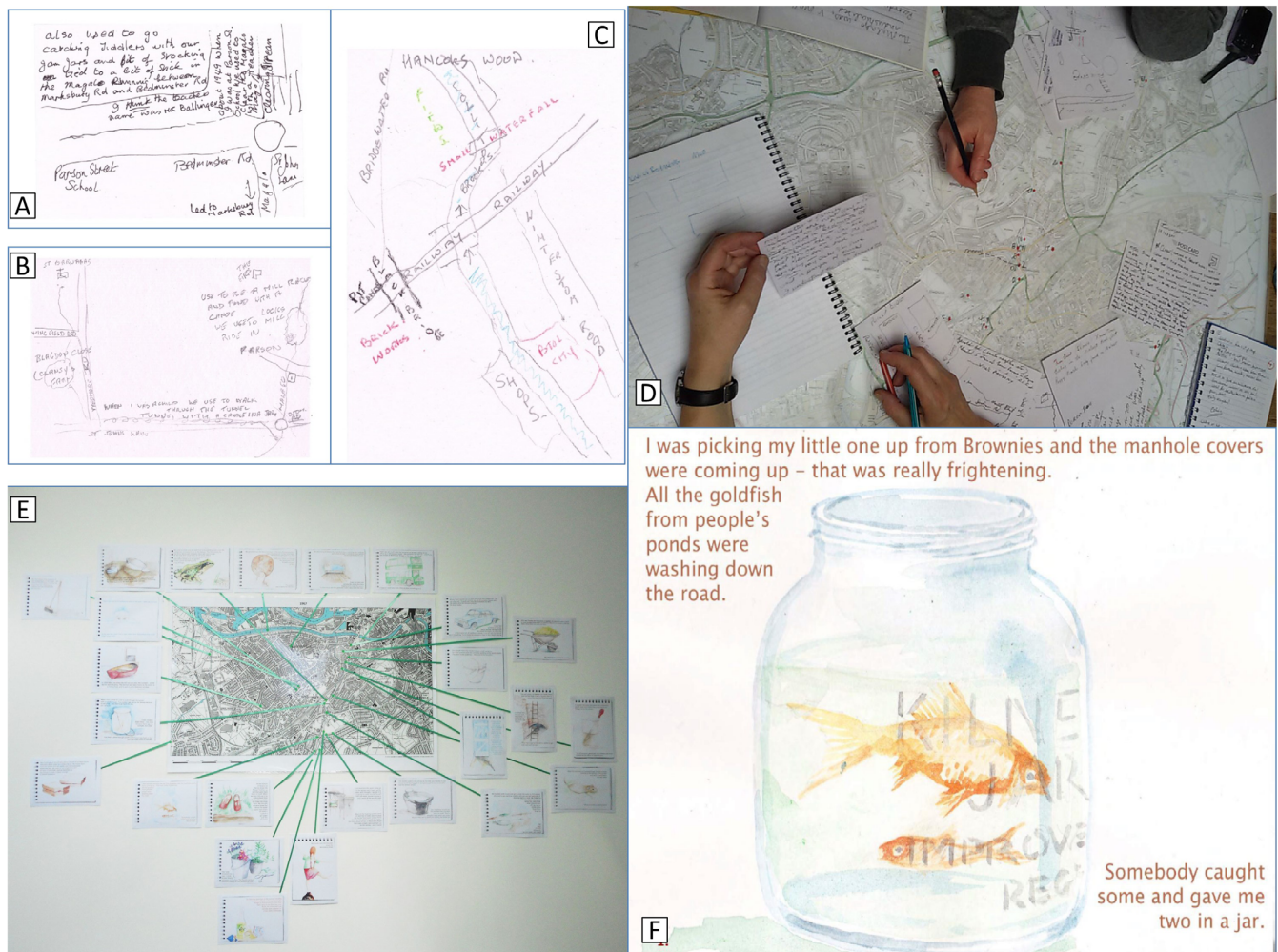

FIGURE 3 Mapping older people's stories (3F credited to Luci Gorell Barnes).

man who died"; another participant shared the eyewitness account she had heard about "the man being sucked into the water" as he tried to help "the girl on the bus." In various ways, they all knew this peak story, positioning themselves relative to such collective memories. These seemed to play significant roles in their senses of place, identity, and belonging. Their flood stories, and their telling, carried a sense of having shared a major event, and of resilience in surviving it. For example, one participant said after her budgerigars had drowned: "It broke my heart, but we rolled up our sleeves and then we started with the brushes."

Asked to share their memories of the river, many participants chose to recount childhood stories, describing "fishing for tiddlers" and a collective memory (for some) of lifelong friendships linked to place, and halcyon days spent on Colliter's Brook "upstream with Mrs Gunningham":

> One … guy at our group, his mother took him with a group of other children to Colliter's brook and they had picnics and swings … and I said, I have never heard of Colliter's brook.

Others shared: "during the war, there weren't many activities at all; the river was fascinating wasn't it" and the weekly routine of "walking [the Malago] with my mum and dad on a Saturday."

Nostalgia pervaded some stories, with "being alongside the river" described with the "longing for a lost Paradise," with local waterways appearing as elements from their past rather than present lives:

> You take things for granted don't you? Especially in your own area, you don't think about it really as a river sort of thing, it's just the Malago, you just go down and play … you only really cover that small amount of it. (Focus group)

Idyllic memories sat alongside memories of heavy industry and pollution in the same waterways ("dirty"; "smelly"). Contrasts of clean/polluted water; childhood/work; care/neglect of place echoed throughout these conversations:

> Tanneries used it so it was filthy and horrible. But you haven't got those industries using it … more things you want to look out on nicely. Not a tip like they have made it now where the houses are. So I think it's important that those people are made to clean up when they finish. (Focus group)

Other exchanges with older local people were deliberately more informal and individual – connecting with those embedded in the community but unattached to formal groups. For example, Luci visited Pet, who runs the local laundrette, and Jane, the local hairdresser, hearing their river stories, including childhood and flood memories.

In response to the older people's desire for a tangible record of their experiences on the project, Luci produced watercolours to depict 25 of their stories, collated into a book with quotes (Figure 3e).[12] Participants were given this to engage them in further conversations. Older people reflected on processes of remembering through drawing and sharing:

> The memories wouldn't have been so vivid without the artist. I think [Luci] brought it to life … Often … when you hear something … it's very interesting, brings back a lot of thoughts but when you leave there, it's gone. Whereas when you are drawing something or when like Luci produced the book there, it stays with you then doesn't it. (Participant feedback)

4.2 | Emergence: children's personal landmarks maps

Initial work with the children was exploratory and open-ended. It tested whether and how local rivers featured in their lives, what role water might play in developing senses of self and of place, in and out of school. Later interactions became more focused on specific waterways. In the first session, Luci guided the children in making their own maps of places that were important to them. Initially, Luci showed children her own creative work, with the caveat that it takes a long time and many renditions to produce these creative maps:

> The purpose of sharing my work is to represent myself as not having always been an adult; to act as a leveller by showing my own vulnerability before asking them to engage in quite a personal way; to value the subtle

and particular knowledge that my maps represent, and to give the children permission to express their own lived experiences. (Luci)

These maps, based on feelings and personal experiences, helped validate children's perspectives on places and events, as evidenced in later focus groups.

The children then mapped their own significant places on small plain postcards (totalling 120 + postcard maps; Figure 4). Luci presented this as a "do-able" task, allowing expansive detail if wanted. Because all participants used similar materials, the limited palette gave collective maps a visual congruence despite their individuality (Figure 5). The children liked:

The way it's not accurate. It's just like you can do anything you want and it's your ideas and it doesn't have to be specifically anything

[that] it's just the stuff that I like doing and where I go a lot, so I didn't have to stop, keep on doing whatever I want and there's a story that I remember as well … (Focus group, St Mary Redcliffe Primary School)

We only mentioned local waterways – and flood risk – at the second meeting, allowing us to appraise first the children's awareness of the two local rivers. This avoided children orienting themselves to our agenda, rather than representing their own perceptions of what was important to them. Consequently, they created versions of their territory, into which our "river suggestions" could later flow.

The postcard maps showed how the children experienced their neighbourhood and themselves within it. Some maps linked narrative and metaphor in as much as their naming of places, objects, and actions – e.g., "The World Battles"; "The Season Tree," "sacred trees," "deadly thorn bush" – characterised their narratives. These grand-scale metaphors also constituted their realities and identities, as well as representing them. Some children included faraway places – their families' countries of origin – when drawing a map of "important places" in their neighbourhood. This deepened our understanding of how space is constructed differently for different identities and connects to place. How somewhere physically distant can feel closer than the other side of Bristol, even if the person making the map has never been there.

4.3 | Connecting and enacting – "park visit" and river walk

On the second meeting with each school, we focused on the environment around it, perhaps making this more present in the children's minds. For some, it had not featured strongly before. We walked the local rivers – hidden and culverted – meeting members of local environmental activism groups (FroGS and Windmill Hill and Malago Neighbourhood Planning Group (WHaM)) that focus on the rivers. These provided strong "connecting," fact-finding "river explorations," observing and imagining their course, understanding their history, seeing wildlife. Finally, children started to vision possible future changes, re-creating with parachute fabric. A teaching assistant, accompanying classes on the Malago walk, offered the story of her parents' experience of the historic 1968 floods as we approached one culvert opening. This provided new images for the area we were walking through. Where Colliter's Brook runs under the park, Matthew (FroGS) told stories and shared images of historic floods on the river. Helen constructed a treasure hunt of wildlife figurines, talking about types of animals, birds, and plants that enjoyed the river habitats. We also listened quietly to the water and other sounds we could hear, engaging both senses and imagination.

The children took detailed notes and photographs, so developing opinions about the river, its history, wildlife, and potential; these then fed into their subsequent planning maps (Figure 6). The community enabler's ability to communicate her knowledge and enthusiasm for wildlife was important here. The children seized opportunities to share leadership, increasing their decision-making to develop personal competence and "generative" responses to their environment (Chawla, 2009, p. 16). Afterwards, in focus groups, they were invited to reflect on, and present outcomes of, their research process and their group-working. They shared their enjoyment in "making the river"; creating "oxbow lakes"; and in working "well" and "relaxed" as a group.

They thought about the future use of the river for wildlife and recreation – that they would "love this to actually happen … make the community more wildlife friendly and green" and "the river be unburied so you can play all sorts of games." They also noted challenges of daylighting with the need for "a lot of determination," "never give up," "tons of money," "a few people to help you," and "space" as recurrent themes.
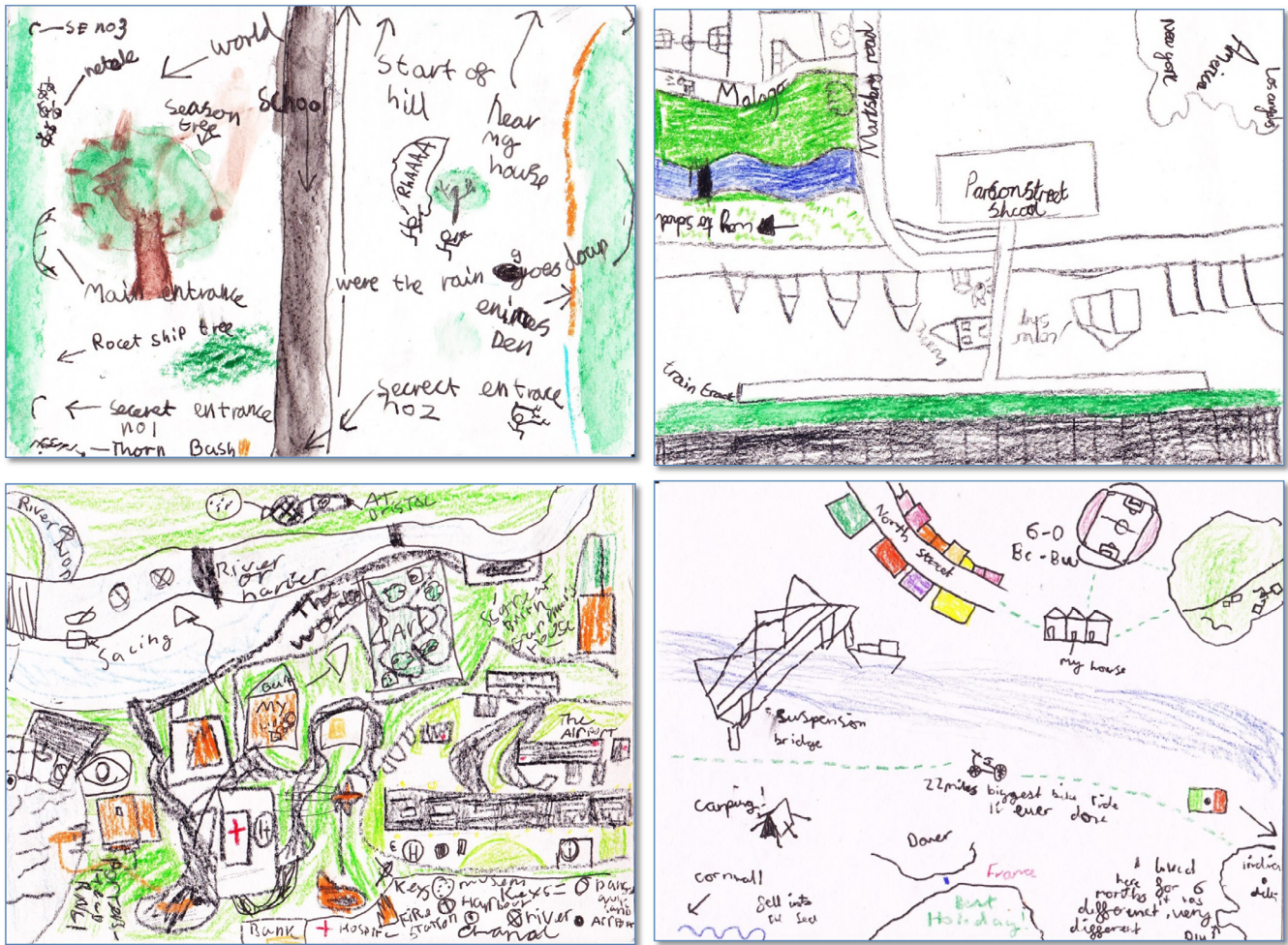
FIGURE 4   Examples of children's postcard maps.

4.4 | Imagining and reflecting: group planning maps, their refinement and sharing

Physically playing out "daylighting" led to children making layered maps, allowing them to draw where they thought the river might run if brought above ground. We shared extant short visual resources about "daylighting" and local water management connecting different UK and global contexts. These included: time-lapse video of "Daylighting Sawmill River," New York; CIRIA's film on Sustainable Urban Drainage (SUDS) "Ever wondered where the rain goes"?[13,14] These were linked to new regeneration issues playing out locally regarding the Malago. It felt important to find ways in which their voices might be heard, given that local children will be most affected by such proposals. In groups, they then drew up plans or "river visions" (c. 28 maps) for how they would like to see the river and its immediate environment developed. We discussed flooding, SUDS, wildlife possibilities, safety, and finance. At St Mary Redcliffe Primary School, our discussions evolved around local development proposals in an area by the Malago the children saw as completely derelict. We then showed them evidence that the space was used for drug-taking and by homeless people. Some thought about how their "river visions" might affect these people; others suggested homeless shelters and food banks in their proposals.

Children suggested playful, innovative, but realistic solutions to real problems, juxtaposing different ideas (e.g., "flood park"; Table 2). These included different wildlife habitats (bluebell woods; ponds), nesting boxes, glass tunnel for viewing underground wildlife, more green roofs to soak-up rainfall, rain-fed swimming pool, and flood-ready adventure playground on stilts. Ideas were often creatively holistic with inventive connections between different elements of their thinking, physically, socially, and economically. These included: how to manage floodwater, filter it, and re-use it, how to use solar power to power filtration systems, and how to incorporate art into the design. The children had differing views of, and complex relationships with, places, each other, and the natural environment.

FIGURE 5 Sharing the children's postcards at the exhibition.

These motivated us to develop our work further. Will, landscape architect and WHaM member, presented further information on sustainable local water management in the UK and internationally from his professional work. Considerable overlap emerged between the children's proposals and his practice, suggesting that some of their visions might be realisable. We asked them whether they were considering flood risk, prompting new ideas and developments in their plans, and talked about climate change and possible new weather conditions. The children drew on their river walk, SUDS video, and Will's talk to come up with highly creative but potentially viable solutions. Issues like responsibility for clearing rubbish in rivers, and different animals' habitat needs, were reflected in their planning maps as litter bins and wildlife spaces. Diverse views and opinions emerged, some reflecting the children's own interests, e.g., play areas/pirate ships. Some derived from trying to please us when we had given prompts on wildlife or other concerns; others we questioned, like suggesting keeping animals deep underground for food.

FIGURE 6 Examples of children's planning maps and workshop in progress.

TABLE 2 "Visioning" ideas generated by the children

Theme	Visioning ideas
Human habitat	• Youth centre where young people can learn new skills and make friends. • Picnic and play area with toilets, litterbins, and a water fountain, linked to other areas by a bike track. • Increased sports facilities including football pitch and crazy golf to cater for all ages. • Glass tunnel to allow people to view bugs, worms, and other creatures that live underground.
Considerations of wildlife	• Eco-centre for people to see and learn about creating good habitats for wildlife. • Bush craft centre to encourage people to spend time outdoors and use natural materials. • Using junk cleared from the river as raw materials for a sculpture competition with local artists. Winning entries to be installed on riverbanks and illuminated by solar powered lights. • Nesting boxes in a range of sizes for birds and bats. • A pond to provide habitat for variety of water creatures (e.g., frogs and dragonflies). • Bluebell woods to provide wildlife habitat as well as calming and beautiful environment for people.
Managing flood risk	• Green roofs installed on as many buildings as possible to help soak up rainfall. • Swimming pool fed with rainwater filtered through a frog sculpture. • Adventure playground with a moat, which would be designated as a flood park with structures on stilts so that when it floods it is still useable – and even more fun!

In connecting and (re)connecting, we shared the children's maps with the older people's groups to gauge their take on the young people's ideas. Luci acted as go-between in exchanging narratives, storytelling, and imagination, given logistical challenges of bringing children and older people together. Their maps disrupted some older people's worldview; some had been dismissive of "young people today," perceiving them as "constantly on computers/phones," unconnected with nature. Sophistication in the children's ideas impressed them. One talked about "getting stuck in a way of thinking" as she grew older, and felt that the children had "come up with things we wouldn't think of." Another said:

> They've got imagination, I love children like that … they had some bright ideals. (Focus group)

The older people believed that children's thoughts/opinions should be heard, despite concerns that developers would "win in the end." Overall, consensus existed that children are "the planners of the future" and should be part of consultative planning processes (cf., Morss, 2017).

4.5 | Enacting: presentation of "river visions"

Children inherit negative environmental and social situations but are rarely invited to contribute to finding solutions, posing ongoing questions about their participation in decision-making processes (International Youth Foundation/Unicef, 2003). Here children reflected that they were "too young but it doesn't mean that we can't have our say," and the difference in their worldview, "we don't actually understand the world as we would in ten years":

> Even if you don't get to vote it'd be nice to just talk about it. Even if you don't actually put your whole self in … to talk about what it could be. (Focus group St Mary Redcliffe Primary School)

Mention of voting indicated some sense of democratic processes, citizenship, and related empowerment.

The children then presented their creative maps of "river visions" to an invited audience of teachers, parents/carers, ecologists, and local stakeholders in river management and community development, assembled by the community enabler. Helen led and facilitated this process. Because of limited time, children were encouraged to highlight six features of their plans for the future river, focusing on aspects of human/wildlife habitats and flood risk management. This proved slightly problematic, as we moved from encouraging and valuing everyone's views to privileging a limited spectrum of ideas. Subsequent reflection suggested this had both simulated actual governance processes and raised concerns for some children. By-and-large, they presented one thing from their map to the diverse assembled adults, followed by audience questions. This audience later reflected positively:

> Good to see the future residents of Bedminster/Windmill Hill thinking about the type of place they want for them and future generations … They demonstrated the complex issues that planning/development need to consider … in this area. (Developer)

> I loved the multiple issues and how they are interdependent: property, children, wildlife, water, play, education – so thoughtful! (Local councillor)(Developer)

> Some really good ideas, especially about how water in the area can be used and enjoyed, and dealt with if it floods! (Representative, Neighbourhood Planning Network)(Developer)

> Very inspiring; highlights their longing for nature connection and builds eco-awareness. (Parent)
> We must make at least some of them happen. (Community development volunteer)

Helen observed how the audience:

> Was impressed by … the imaginative, thought provoking nature of their ideas and how well they had tackled issues around wildlife and flood risk.[15]

Our reflections showed, however, that this process differed from other parts of the process, being potentially intimidating:

> Something made us try to be too organised, and I feel we lost a little in the presentation to the community, by tidying up the kids' thoughts and ideas. What they did initially was … more than good enough. (Helen)

This reduced value given to everyone's ideas/voices in earlier stages, privileging more dominant or confident children. Arguably not all children felt empowered by this process, but we could not follow this up. Despite these limitations, river visioning provided an effective way to bring children's voices into local planning processes – to a greater extent than usual – alongside adults more involved in governance.

The teachers noted that our processes exposed the children to people from professions they might not otherwise encounter, with potential implications for their knowledge, aspirations, and (perhaps) social mobility. While untestable, this is nonetheless an interesting observation:

> I think all these experiences they have they can draw upon when they start thinking a little bit more about what impact they want to have in the world throughout their lives … (Teacher focus group)

4.6 | Participatory daylighting of organisational stakeholders' river visions

Throughout our braided research process (Figure 2), we engaged with stakeholders with roles in, and responsibilities for, local water management and community resilience-building. Some were already in dialogue about possibilities and realities of local physical daylighting with community individuals/groups; indeed, one resident actually daylighted the Malago in his garden. Early in the process, agency stakeholders contributed specialist knowledge, experiences, maps, historical technical documents, and their local networks as hybrid knowledge. This built a diverse learning community around creative participatory "daylighting" that stimulated our community mapping and river visioning sessions. With these stakeholders, we conveyed our processes of working with local citizens through their "experiencing the processes." Luci's approach here highlighted their personal links with surrounding environments, which included those who did not have strong local connections, but could find ways of illustrating their feelings for it or somewhere nearby. This process encouraged participants to reflect on a spectrum of responses to place: strong local associations, professional links ("water testing"), leisure/social links ("drinking with friends"), and links to an intimate, multi-faceted multi-functional space.

Stakeholders and members of the research team participated together in creative mappings that introduced them and described their "relationships to local water" (Figure 7), then undertaking field visits to the two rivers. We considered building mutual capital with organisational stakeholders as important for our research legacy in South Bristol, and wider Bristol as a "Water City." However, others cautioned pragmatism in terms of the project's impact:

> Issues are not resolved by single projects, though they can make valuable contributions. Long-term and sustainable outcomes need long-term and sustainable inputs. (Volunteer, community development association)

4.7 | Connecting, (re)connecting, reflecting: the braiding process

Throughout our processes, participants enjoyed looking through Luci's project journals that captured emergent processes through images (hand-drawn sketches, photos, maps) and brief texts. These allowed Luci to find particular events along the project's timeline.[16] The journals were intimate, handwritten, and illustrated, capturing influences and ideas, so materialising the process from Luci's perspective. This allowed participants a project overview by seeing where their contributions sat within it. These journals also played a crucial role in avoiding unintentionally rewriting history, and in forgetting how a position was arrived at. Retrospectively, the dominant narrative might say "it was always this way," while the actual journey was more haphazard. They were also a comfort source for Luci, reminding her that it is fine to "not know" what is happening.

In later stages of the process, older and younger people's work was mixed and mounted together in a five-week exhibition at the local city farm. Luci designed and curated this, aiming to illustrate the whole creative participatory daylighting process. It included: historic local maps; a nature table display of river ephemera; participants' personal landmarks maps; young people's planning maps; a slide show of the process; older people's stories illustrated and located on a map; and the artist's project journals. Designed to engage with as many people as possible through diverse potential access points and connections, audience participation and reflection was embedded into all aspects of the exhibition. This started with the

FIGURE 7 Organisational stakeholders' "relationships to local water" maps.

flier, posing the question "Is there a river beneath your feet?" People engaging with the exhibition were invited to contribute their own water stories, make/add their own landmarks maps to the display, and feed back their views on materials within the exhibition.[17] Two people observed:

> Feels like you are underwater along with everything else. Love reading about people's stories of the river – made me think of my own …
> Full of colour and unusual stories about the landscape right under our noses …

Another reflected that contents collated were "from them that knew, for the present and future to see."

5 | DISCUSSION AND CONCLUSIONS

Our research shows how innovative, co-produced, arts and humanities-centred, interdisciplinary research can catalyse a reshaping of local eco-social relations. It does so by enabling individuals and groups to reflect creatively on how they

imagine and practise their relationships with the water environment and with their various neighbours (human/non-human). Here we reflect on this, the role of creative participatory "daylighting," and through this, enactments of local hydrocitizenship.

5.1 | What can be learnt from our research processes?

Our emergent, transdisciplinary participatory process was characterised by an obliqueness and necessary fluidity, of "living with mess" and risk-taking. The understanding that creative practices evolve was central to recognising the intuitive aspect of this type of research. This involved getting a feel of a subject, of making creative connections between different things and people, and bringing together ideas, concepts, materials, and people into open assemblages that do not foreclose on their topics. Such a process inevitably challenges disciplinary norms regarding "data" and its analysis, with research and arts approaches running in creative tension. While personal experiences varied, we largely drew strength rather than angst from hybridity and risk in our methods.

Alongside this messy emergent process, the term "co-production" provoked initial cynicism from community partners, emphasising the importance of academic rhetoric meeting real expectations. Our transdisciplinary learnings about collaboration required building trust, cooperation, friendship, and respect – learning to work together, and finding ways of mutually understanding the evolving dynamic. This included "learning to participate" in emergent roles and to capitalise on knowledge and skills differences (between individuals, communities, disciplines, professions etc.). Multiple (productive) tensions existed: over ownership of ideas, methods, local vested-ness in processes, challenges in bringing together community-oriented people with academics, and frustration in slow, co-production processes. We needed to retain ownership of elements of these whilst recognising hybridity in our research processes. For example, the artist was invited in part-way through the project, but asked to deliver on particular things within parameters and collaboratively. Co-production processes needed to be negotiated carefully with time to unpick frictions, e.g., how socially engaged practice meets social science framed forms of thematic analysis. This same "braiding" enabled new inter-professional collaborations, skills exchanges, and social/professional links during the research and beyond, resulting in unexpected benefits, e.g., new thinking around digital storymapping.

5.2 | What is the value of creative participatory daylighting processes?

"Daylighting" as a notion surfaced because pre-existing local interests and concerns in South Bristol met with recognition among academic researchers that the concept was a cross-cutting, inclusive mnemonic with potential for creative exploration. We built on that, discovering how "daylighting" as an emergent concept engaged various groups – as an intuitive, imaginative, alternative way of thinking about communities and rivers (Figure 2). Acts of authoring can generate sense of ownership, with participants "getting to grips with" their environment by creating work that reflects their concerns about it, and visions for it. Luci argued for foregrounding of poetics in our participatory processes:

> Allowing people to be vague, lost, and not needing to know animal/plant names on our field trips. I saw my role as an artist to enable and allow personal, vernacular and off beat responses to geographical/political/ecological issues.

Participatory river "daylighting," as an ongoing process, provided ways into "creative conversations" through layering multiple meanings surfacing complex narratives about people, water, and place. We all learnt of the physicality of daylighting local rivers, historic water infrastructure, and ecologies (what is seen/unseen; acceptable/unacceptable); of local people's changing relationships with water and others; and of (dis) and (re)connections between less heard water memories and experiences of old and young within a river catchment. This oblique, open process avoided engagement through isolated issues, which easily miss creative, connected understandings of water and the myriad ways it interweaves with – and is essential to – all life on earth. We found "daylighting," as an abstract concept or hook, allowed more holistic framing of local issues. With the open, artist-led process and key involvement of the community enabler, the focus became about local redevelopment more broadly.

In sharing our research ethos, we suggest physical river braiding as a complex comparable process (and mnemonic) that captures stories, their emergence or otherwise, making connections and (re)connections when urban spaces are construed as "Water Cities." Our iterative processes, of seeking out voices and stories "less heard" by professional stakeholders, can be conceived and played out within an ongoing cascade of "openings": emerging, connecting, enacting, imagining, and

reflecting. Swyngedouw's (2009) "hydrosocial cycle" foregrounds local circulation of water, knowledge, and power. In contrast, in creative participatory "daylighting," personal knowledge, experience, memory, affect, and complexity of relationships emerged through surfacing past, present, and future water relations in South Bristol. We deliberately began by listening to children's perspectives of their neighbourhood, followed with introducing rivers and "daylighting." This was intended to make the participants' concerns central to initial conversations, rather than our own agendas (here interest in hydrocitizenship), and to allow ideas to emerge freely. For example, the children's "river visions" of daylighting local rivers allowed for complexity, creativity, and freedom of thinking within later constraints, and involved re-imagining and re-claiming their neighbourhood for play and nature. However, tensions inevitably existed in co-production processes in how different interests, agendas, and positionality emerged and met; who leads or scaffolds activities, when, and how; and how water as a focus or concern is woven into the process cascade. We moved from sharing information about the rivers to asking the participants to integrate this with their existing interests and concerns about the neighbourhood including the river – which some had not mentioned initially. In this way, the process was guided, but within that guidance children's ideas, concerns, and experiences were valued and supported.

Participatory daylighting as a strategy for local hydrocitizenship is also about preparing and capacity building; about facilitating agency in citizens to increase inputs from civil society in current and future processes in urban (water) planning. Growing debates exist about potentially contentious planning decisions, environmental risk management, and education in which children's opinions often go unheard (Blazek & Kraftl, 2015; Jans, 2004; Kitchin, 1999; Roe, 2007; Wridt, 2010). Boal's (2000) "rehearsals for revolution" gain efficacy in framing and shaping responses to problems, e.g., through peer education, participation in community planning groups, or acts of cultural activism. Children need to develop "generative skills," which can be flexibly improvised in response to changing circumstances (Bandura, 1997; Chawla, 2009).

5.3 | What are the implications for enactments of hydrocitizenship?

Our research sits at the creative intersection of progressions "towards creative participatory daylighting," and "towards hydrocitizenship." On reflection, enactments of hydrocitizenship in our research are best described as "weak," with underlying presuppositions remaining largely unchallenged. Our focus was on animating the need for better human stewardship of water. Settling for this "weak" enactment (without forgetting the radical implications implicit in a "strong" enactment) liberated the team from capture in the gap between current high theory and actions based on common everyday understandings and practices. Guattari's (2008, p. 18/19) notion of ecosophy – with its three distinct but interwoven ecological registers: the environment, social relations, and human subjectivity – provides a conceptual framework for negotiating tensions between "strong" and "weak" enactments in the practice of participatory "daylighting." This urged a thinking-together of questions of self, society, and environment. Ecologies of environment were explored through facilitating multiple conversational mappings of "watery" places, either experienced in the moment or through memory via outward-looking "flexible and responsive processes." Ecologies of social relations were considered through "supporting people to represent their individual perspectives as part of a shared purpose," while in ecologies of human subjectivity, we "enabled ourselves to think imaginatively with ourselves."

In each "field," the artist's agency is consciously positioned as not only open and hospitable to others' needs, but as privileging those qualities over production of "Art" (understood as an activity ultimately seen as exclusive to an "Artist"). This position differentiates Luci's practice in relation to the project from dominant presuppositions about the special or exclusive creative role of the "Artist" in a culture of possessive individualism. However, we cannot assume that socially engaged artists are not proprietary.

> It is important not to conflate someone having the ability to facilitate creative processes for others with them having no creative drive or vision of their own. In my opinion, a successful socially engaged project would contain both these aspects. As a practising artist, I spend a huge amount of time considering practice, methods, aesthetics, meanings, access etc., and these skills, experience, and creative voice are part of what I bring to a project. (Luci)

Such complex issues relate to ongoing mutations of certain forms of art practice and the identity "Artist," and are beyond this paper's scope. However, the primary concern of "mutant" or "ensemble" practices like Luci's is with shared creativity as a form of "mutual accompaniment" in Watkins' (2018) sense of that term. This is an appropriate response to the urgent need to develop highly adaptable processes "that enable us to think imaginatively with ourselves, and each other" in an ecosophical register.[11]

5.4 | What is the legacy of our daylighting processes for local hydrocitizenship?

Reflection on our research legacy stresses the obligation to build capital in different ways: through empowering older people to contribute capital and knowledge for resilience and capture their knowledges for posterity; through children gaining senses of empowerment and agency as citizens; and through deep understanding of connectedness of local knowledge and emotions relating to place. All have potential to increase watershed thinking (cf., Loeffler undated) in bringing water into consciousness, and in trying to understand people's specific water relationships in their river catchment. However, this risks potential disempowerment if voices elicited are ignored. Effects of our exposing the children to a professional artist, academics, and other professionals remain untested. Will this impact on children's aspiration, autonomy, and group working; their expressions and creativity about an area; their understandings about processes of deliberation and governance; the way their teachers think about children's citizenship, local geography, and place in the classroom? Our research generated further questions from our community association partners about accessible archiving of our co-produced resources (maps, plans, reflective learning), and sustaining relationships as foundations for future working.

Our daylighting methodology now has potential to cascade out, building from our "two rivers" as particular "moments" or spaces in the wider water landscapes of South Bristol. Our 15 "top tips" (Table 1) provide reflections on how creative participatory "daylighting" as a series of "openings," its ethos, and what is valued in its process can stimulate thinking about hydrocitizenship and urban spaces as "water cities," cascading both water and narratives. This integrates the value of oblique engagements and emergence – engaging with water and place holistically.

In conclusion, our research highlights the value of collaborative arts and humanities-centred interdisciplinary research, characterised by creativity, participation, obliqueness, fluidity, and braiding. Creative participatory daylighting, as a concept, process, and practice considering water and citizenship, sits beyond the paradigm of social daylighting. It is explicitly concerned with the less heard in demographic, cultural, (inter)generational terms, exploring connections, disconnections, and possible reconnections with people, water, and ecology through the surfacing of local water (courses). Such work offers a basis for a new, expanded sense of ecological "citizenship" in relation to self, community, and local rivers, in promoting sustainable environments and livelihoods. Inevitable tensions play out between (utopian) "priming for revolution" and citizen empowerment integrating meaningful participation. Active hydrocitizenship is, however, critical in building community resilience within pressing contexts of social and climate change. Our research processes, and multi-stakeholder reflections within them, provide a valuable example of higher order participation (co-production or "higher rung Arnstein"), with all its messiness, complexity, and conflicts exposed. It thus provides important insights into what meaningful, highly adaptable, creative co-production that captures "lesser heard voices" could look like for researchers, developers, and other diverse stakeholders working effectively to co-vision resilient futures.

DATA AVAILABILITY STATEMENT

Images and resources discussed in this paper are available in primary or secondary form on the Water City Bristol website (www.watercitybristol.org).

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ENDNOTES

1 https://www.epa.gov/urbanwaterspartners
2 Title: *Towards hydrocitizenship: connecting communities with and through responses to interdependent, multiple water issues.*
3 http://multi-story-eastville.co.uk
4 Belief that human beings have special status based on their unique capacities.
5 2012 documentary *Lost Rivers*, Icarus Films.
6 http://www.ghostarroyos.com
7 http://waterwash.org/new/wp-content/uploads/2016/01/WATERWASHing.pdf
8 https://www.bristol.gov.uk/documents/20182/239329/big-blue-map-of-bristol.pdf
9 https://www.bristol.gov.uk/people-communities/area-statistical-profiles
10 Public-facing factsheets exist – *Malago River Fact Sheet*; *Ashton Vale Flood Defence Scheme*.
11 Luci Gorell Barnes http://www.lucigorellbarnes.co.uk
12 Book available: https://www.watercitybristol.org/uploads/2/6/4/2/26426437/tales_of_two_rivers_2.compressed.pdf
13 Film is no longer available online (https://twitter.com/lostriversdoc/status/591033830837977088).
14 CIRIA's sustainable drainage animation (www.ciria.org/CIRIA/Resources/Videos/Resources/).
15 Helen's event report in community newsletter: https://www.southbristolvoice.co.uk/children-environment
16 See www.watercitybristol.org for project journals.
17 As research sharing/legacy, Luci collated materials in a digital storymap (https://sway.com/kAoqBWs8XAnvvp9D?ref=Link).

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