

Risk Beyond Human Eyes

Nature-Centric Approaches (NCA) to Systemic Risk

INITIAL OBSERVATIONS FROM THE RIVER TONE, UK PILOT

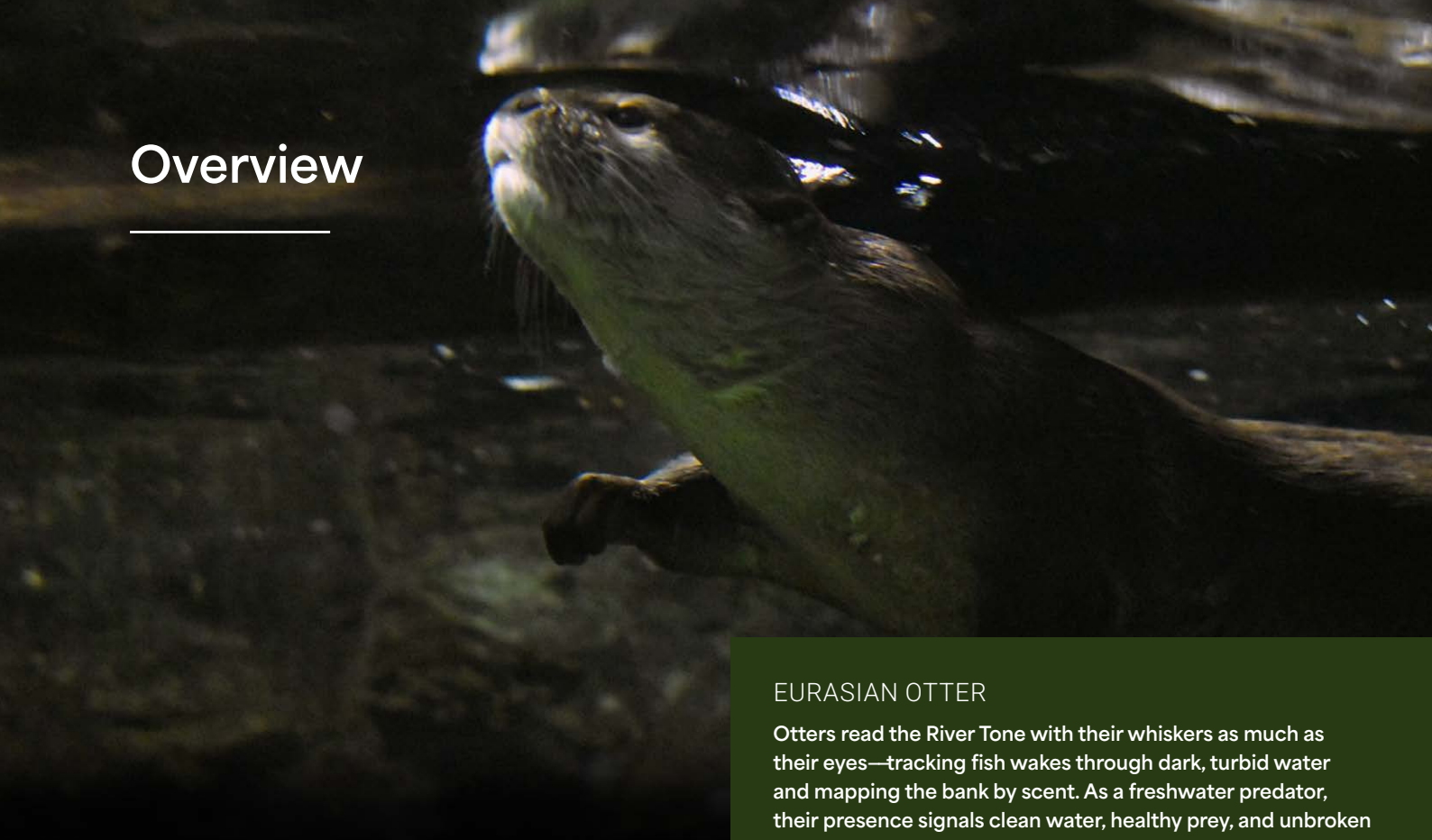
24 SEPTEMBER 2026



Accelerator for Systemic Risk Assessment



Overview



EURASIAN OTTER

Otters read the River Tone with their whiskers as much as their eyes—tracking fish wakes through dark, turbid water and mapping the bank by scent. As a freshwater predator, their presence signals clean water, healthy prey, and unbroken corridors. Where otters thrive, the river is working.

“[Risks Beyond Human Eyes](#)” was a pioneering six-month project that brought together community members from across the River Tone catchment in Somerset, UK—from source to mouth—to explore systemic risk through the eyes, senses, and needs of otters, deer, earthworms, salmon, and kestrels. Rather than starting from a human-centred view, the project experimented with more-than-human worldviews, creating new ways to understand risk, resilience, and future possibilities for bioregions.

This project was a collaboration between ASRA (Accelerator for Systemic Risk Assessment) and the University of the West of England (UWE), delivered in collaboration with Friends of Longrun Meadow and Somerset Wildlife Trust. It was funded by the Ecological Citizen(s) Network+ (EPSRC/UKRI: EP/W020610/1).

In 2024, ASRA published its [Principles for Systemic Risk Assessment and Response](#) (see also [Richardson et al., 2026](#)), which included a principle that recognized the sanctity, inherent value, and agency of non-human life. In 2025, Dr. Miguel Prado Casanova (University of the West of England) and Patricia Fraga Pérez (anthropologist and UX designer) launched the [More-Than-Human Lens](#), a tool for recalibrating perception, empathy, and responsibility to the more-than-human world. Mutually interested in methods that counter anthropocentrism, we came together in late 2025 to operationalize a first-of-its-kind pilot to take a nature-centric approach to systemic risk assessment and response.

This document summarizes ASRA’s initial observations from the pilot, which explored how to see “risk beyond human eyes.” The Appendix at the end of this document defines a handful of terms and phrases used throughout.

The problem we were trying to solve

Systemic risk assessment and response is currently deeply anthropocentric. It measures risk by human loss and human value, neglecting and diminishing the concerns of non-human others—that is, plants, fungi, animals, ecosystems, and other living beings—purely on the grounds of their being a different, and according to many worldviews, lesser species. A nature-centric approach to risk is not simply about adding an environmental layer to existing frameworks. It asks us to reconsider what is valued, how something that is valued can be harmed in different ways invisible to human senses or ways of life, and what, therefore, we should act on when we consider serious risks faced by non-human lives.



Weirs were identified as major risk features—from small rock barriers at Back Stream near Bishop Lydeard (left) to one of the most well known at French Weir (right).

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The River Tone faces many well-documented risks, from flooding, abstraction, pollution, habitat loss, and fragmentation to climate change, soil erosion, and disease. However, no current risk assessment of the bioregion assesses the risks—and their impacts—from a systems point of view: how they interact, compound, and increase in severity. Nor does any current assessment attempt to understand these risks from perspectives beyond the human.

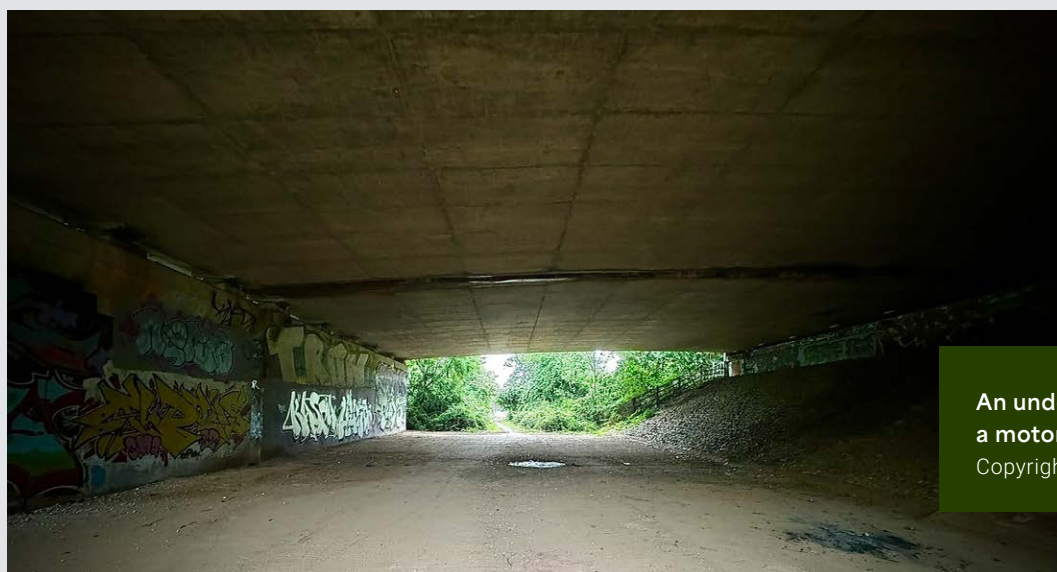
One way of looking at this is that humans account for only 6 percent¹ of the animals living within the River Tone bioregion, yet risk is still assessed mainly through human experience and human interests—in effect, through the perspective of a small minority of the system's inhabitants. What is missing is a way to identify, understand, and act on systemic risk as it is experienced by the other 94 percent. This matters because it leaves humans with an incomplete and potentially inaccurate picture of risk. Harms to species, ecosystems, and habitats—and the cascading effects that follow—may be overlooked or underestimated. It also means we may be missing something else: the opportunity to learn from the more-than-human world about how risk is experienced, navigated, and responded to. Ultimately, however, it matters because the 94 percent of the bioregion's population matters—regardless of human values, they have intrinsic value.

At the highest level, the project addressed two connected challenges: 1) anthropocentrism (the belief or bias that human concerns, and humans in general, are superior to other species) within the practice of risk analysis; and 2) the consequences of that bias for how systemic risks are identified, assessed, and acted upon.

Our Approach

We designed the pilot to explore what changes when systemic risk is approached from a nature-centric rather than human-centred perspective. Our approach combined place-based community participation, animal-centred fieldwork, systemic risk analysis, and digital experimentation—rethinking throughout whose perspectives count as evidence, how risk is experienced and described, and how these insights can be translated into collective response.

We chose to work at the scale of a bioregion because it gave us a geographical area defined by a river system, rather than by institutional or administrative boundaries, within which we could examine how risks emerged and interacted. It helped us to connect things that often get managed separately: land, water, wildlife, people. Treating those as separate problems is part of why risks get missed. Participants were recruited from across this river catchment area using word of mouth, local posters and flyers, and social media. One of our aims was to bring together a “river community” with representation from along the length of the River Tone, from source to mouth.



**An underpass beneath the M5,
a motorway in England.**
Copyright © River Tone, 2026

We adapted existing frameworks for engaging with other species’ sensory worlds, developing new methods and tools that enabled participants to work with their chosen non-human animal—otter, deer, earthworm, salmon, or kestrel. This was intended to disrupt human-centred ways of perceiving and understanding risk. We then developed ways to translate these situated, species-centred observations into data and evidence that could inform systemic risk analysis. No one claimed to speak for the animals. The evidence produced was partial and carefully qualified, and sat alongside ecological and scientific evidence rather than replacing it.

Monthly participatory sessions brought participants together to explore possible responses to the risks they had identified. Insights generated through individual fieldwork were brought into collective sessions to examine how risks interacted across the river system, and a digital platform was developed to capture, connect, and spatially represent the knowledge emerging through the process.

We held a risk-response wargame (a type of strategy simulation) at the very end of the project to test the systemic risk response (SRR) built with community-generated animal-centred courses of action. Now, the community is working independently of the project to implement a locally led, long-term SRR plan focused on landscape-scale ecological restoration, a river rights charter, and a legal innovation for recognizing non-human contributions in decision-making.

Throughout the pilot, we treated communications as a core part of the methodology. For example, we looked for a more unfamiliar and distinctive aesthetic approach that could stand out and potentially inspire a different way of thinking about this type of work. Project materials and outputs were designed in a more forensic, systems-oriented style rather than the polished, pastoral imagery often associated with environmental work. We also chose to focus media on the relationships people already have with non-human animals, landscapes, and places, strengthening the story of connection and shared belonging to nature.

Overall, the delivery process was deliberately structured so that each stage built on the last. In this way, the pilot moved progressively from place, to perspective, to risk, to response.

Key Facts

LOCATION	River Tone bioregion, Somerset UK
DURATION	6 months, January–June 2026
RESEARCH PARTNERS	University of West of England (UWE) and Accelerator for Systemic Risk Assessment (ASRA)
FUNDER	Ecological Citizen(s) Network+ (EPSRC/UKRI: EP/W020610/1)
COMMUNITY PARTNERS	Friends of Longrun Meadow and Somerset Wildlife Trust
PROJECT SUPPORTERS	Taunton Town Council; Firepool Centre for Digital Innovation (FCDI); Lawyers for Nature
TOTAL PARTICIPANTS	30 registered (14 remain engaged for the full 6 months)
PROJECT DELIVERY	Formal participant gatherings (in-person): 4 x 2.5 hours Informal participant gatherings (in-person): 4 x 2 hours Online participant check-ins: 6 x 30 mins Participant interactions outside gatherings: 10+ (including 1 book club) Animal collaboration hours: ~52 hours
OUTPUTS & IMPACT	Catchment coverage: Participants represented 80% of all main tributaries of the River Tone Courses of Action generated: 29, including 1 x 30-year operational plan New methods established: 1 x Animal Collaboration Guide (206 downloads and 434 views on Zenodo between 12 June–21 September 2026.); Animal-Centric Situated Accounts/Testimony Animal testimonies collected: 11 Animal site fieldwork engagements (methods testing): 24+, averaging 40–60 minutes animal site digital content fieldwork Collections: 4 Sister river supporters: 2 (River Exe, River Axe).
DIGITAL PRODUCTS	NCA Demonstrator: The first-ever digital risk map built on animal-centric accounts; a web-based Core Ontology viewer for structuring non-human entity properties and research
TECHNOLOGY USED	Hardware: DJI Neo FPV drone with Google N3; Lom Geofón; Lom Elektrouši; iPhone 15 Pro Max; Scaniverse; LilPopo microscopic camera, DJI Action 5 Pro; AudioMoth; Song Meter Mini; OM System LS-P5; Huion Kamvas Pro 16; Fairphone FP5 Software/frameworks/services: DataStorm Professional; Webstorm Professional; PyCharm Community; QGIS; Notion; Miro; Kiri Pro 3D; GitHub; Netlify; Zotero; Affinity Studio; Blender; Unity 3D; VideoLeap; REAPER DAW; Ableton Live; cloud file-transfer systems; Cavalry; IMAX 2.7 AI: Anthropic Opus/Sonnet 4.6–5; OpenAI GPT 5.5–5.6; Gemini Nano Banana; Kimi K2; GLM-5; Whisper audio transcription; various local AI models

PRESS COVERAGE

Featured in *The Guardian* (UK), *The Times* ([here](#) and [here](#)); Times Radio, *The Breakfast Show*, *The John Pienaar Show*; BBC Radio Somerset, the BBC, and *ITV Westcountry News* (forthcoming); *Positive News* (forthcoming); and [Different by Nature](#).

CONFERENCES

“Risk Beyond Human Eyes: Situating Systemic Risk Assessment and Response within Animal-Centric Testimony,” *Natures in Translation: AI, Ethics and Environmental Conservation*, Lancaster University, 1–2 October 2026.

BOOKS

Chapter: “What If We Assessed the Risks Facing a River From the Lives of Those Who Inhabit It—Not As Metaphor, But As Method?” Forthcoming in *Ecological Citizen(s): Prototypes, Provocations and Preferable Futures... Activating and Catalysing Post-Sustainable Practice(s)... A Narrative of Hope*, edited by R. Phillips.

Monograph: Caccavale, E. (forthcoming). *Design and Ecological Citizenship: Reimagining Design Education for More-than-Human Worlds*. London: Springer Nature.

INITIAL POLICY IMPACTS

River Tone Rights Charter: Drafted and set to be formally adopted by Taunton Town Council in October 2026—the first Westcountry river to have a rights charter passed.

Non-human intellectual property (IP): Identification and application of a novel clause in UK copyright law that could attribute IP status to designated non-human entities. In partnership with Lawyers for Nature, development of an advanced non-human IP legal innovation, “Ecological Attribution of Rights” (EARs).

MAINSTREAMING

Methodological insights pulled into a new module proposed with two UK university bids for NERC Doctoral Training Centres on Environmental Evidence Synthesis.

What we learned



COMMON KESTREL

Kestrels hold still in moving air, their eyes locked on the ground while their bodies ride the wind. They see ultraviolet trails of vole urine glowing across the field, picking out prey humans can't perceive. Their hover is a living instrument tuned to the wind, light, and life of the catchment above the River Tone.

The lessons that follow capture our initial observations from this work: what we encountered in practice, what appears to matter, and where further development is needed. They are not intended as definitive conclusions. Rather, they set out a series of emerging insights for those working to understand and respond to systemic risk in ways that take seriously non-human lives, ecological relationships, and whole systems.

LESSON 1

Nature-centric systemic risk requires new theory, methods, and capabilities

What happened: New NCA methods are needed to trace how threats spread and cascade through ecosystems, beyond human systems. This became clear when we tried to apply existing frameworks in practice. Despite having access to the More-Than-Human Lens (MTHL) toolkit and the Systemic Tool for Exploring and Evaluating Risk (STEER), we found that neither was suitable or sufficient for real-world application where the objective was to move from a non-human animal perspective on systemic risk to meaningful action. Both were informative and useful as handrails, but the team had to establish new theoretical positions, methods, processes, legal innovations, and technical engineering solutions to achieve our objectives. We also had to develop new definitions and a theoretical framing, as no established body of work offered a ready-made vocabulary for this pilot (see the Appendix).

We drew on a wide range of disciplinary perspectives—including eco-phenomenology, dynamical systems theory, movement ecology, speculative ethnography, Indigenous scholarship, and

critical animal studies—to establish workable constructs that allowed the project to move ahead. This suggests that mainstreaming *Nature-Centric Approaches to Systemic Risk* will require innovation, deliberate focus, and greater integration across many fields.

What needs to happen now: More work is needed to build on what we learned and developed during this pilot and translate it into methods and materials that others can use, test, and improve. There is an opportunity to bring ecologists, risk experts, technologists, lawyers, and others together to test these approaches with different species, ecosystems, and in other risk settings, and to build the practical tools, protocols, and infrastructure needed to move from understanding a risk to acting on it. This type of work requires intentionally multidisciplinary teams that bring together different ways of understanding and responding to systemic risk.

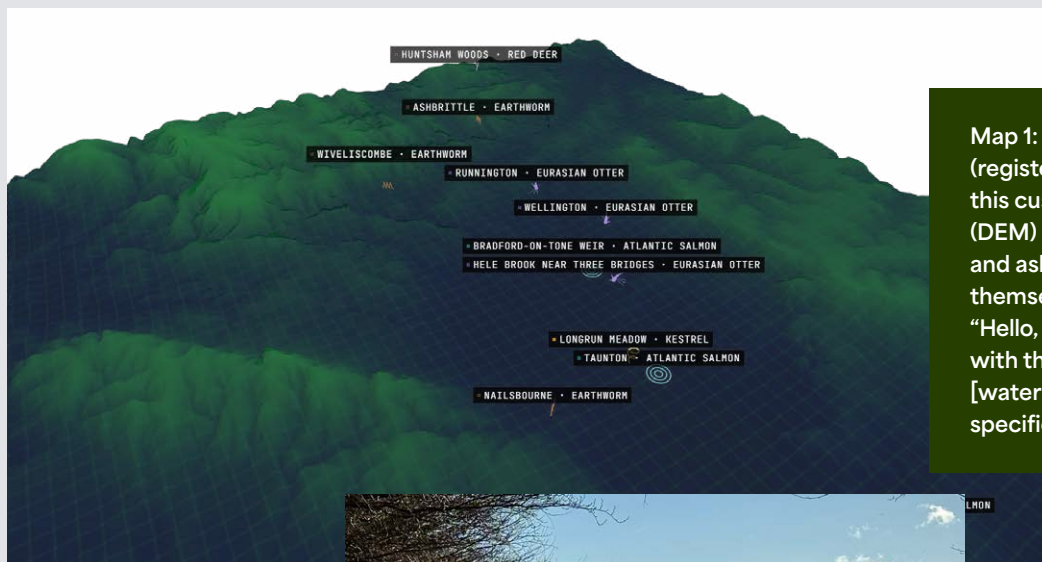
There is also a need to explicitly exclude human concerns from the project's initial scope. We did this by asking participants to agree on the problem (via a tick box) and focus exclusively on non-human animal risk, even where those risks might also pose or generate further risks for humans. Creating space for non-human concerns to shape the analysis requires a deliberate counter to persistent anthropocentrism in our thinking and actions.

LESSON 2

The bioregion is the optimal system boundary for nature-centric risk work

What happened: Most risk assessments focus on potential losses to people, property, and infrastructure. Nature is often treated as a component of that risk, and/or the setting in which the risk occurs, rather than as a set of systems and entities in its own right. In setting out to design this project, we learned that conventional approaches to setting the boundaries for systemic analysis are dominated by anthropocentric ideas of space and place. By setting our systems boundary as the River Tone bioregion (Map 1), we more closely aligned to the landscape-scale ecological relationships that defined the system under analysis. This allowed us to trace the places, connections, and flows that mattered from the non-human animal perspective rather than the human. For example, our otters follow a semiaquatic, 0.5- to 4-metre-wide linear boundary as they travel 8 to 16 kilometres per night along the river, passing between villages and towns. By contrast, our kestrels have a 4- to 5-kilometre² foraging range that spans riparian fields, roads, and verges and extends 20 metres vertically into the air. Along with the geological features of the Quantock, Brendon, and Blackdown hills forming the river catchment, designating the bioregion as the operative unit meant we could explore risk transmission routes and vectors via our non-human animals without imposing human-centred notions (for example, “the local energy or food system”).

What needs to happen now: Future NCA work should consider the bioregion as the default starting boundary for systemic risk assessment, as a practical way to prevent anthropocentrism from shaping a project from the outset. Starting with ecological rather than (geo)political, institutional, administrative, or economic boundaries can help prevent human priorities from defining the system before non-human perspectives have been considered. It's important to remember that migratory species, rivers, nutrients, pollution, and other flows will cross the edges of a bioregion. Future work should explore where boundaries need to extend and how risks travel between bioregions.



Map 1: Approximate locations of (registered) participants. We showed this custom-built Digital Elevation Map (DEM) at the first in-person gathering and asked everyone to introduce themselves using the following schema: “Hello, I’m [name], and I’ll be collaborating with the [non-human animal] of the [waterbody general], [waterbody specific].”

Walking to recruit in the headwaters, December 2025. Lane down to Tripp Farm, looking south toward the Blackdown Hills on the horizon, with the River Tone just off-centre right in the combe running into Clatworthy Reservoir. Copyright © River Tone, 2025

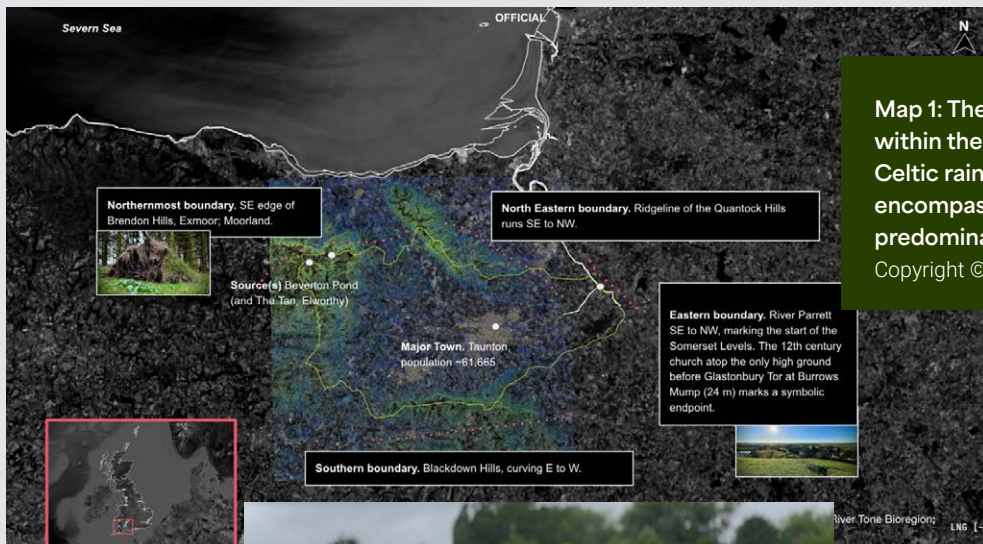


The relationship between people, place, and non-human animals should also be made specific. For example, in this project we “tethered” human participants to specific locations (such as the western headwaters of Back Stream) and to specific geospatial configurations associated with the non-human animals they were considering (such as the 0.5- to 4-metre width of the river for otters). This allowed us to retain ecological specificity while still working at the system scale. On the 3D map we developed for the project, participants’ names were plotted along the river, alongside the names of the areas, creating a visual and named interconnection between the two. This allows future assessments to examine not only what is in the system under analysis, but also who is connected to what, where, and with what consequences.

LESSON 3

Nature-centric risk needs communities organized at ecological scale

What happened: Modern life does not lend itself to helping people feel part of a whole river catchment. Aside from certain groups who live more closely to the land, such as Indigenous Peoples and local peasant communities, people tend to organize in and around towns, workplaces, or single causes. As a result, we found that building a “river community” that covered the whole of the River Tone, from source to sea, meant starting from scratch. This is key to realigning communities to ecological, rather than industrial, flows and logics. We found that recruiting and sustaining a group of people across the bioregion required considerable time and attention, from walking farm to farm in the headwaters, to engaging in every place-based Facebook group, to putting up posters in rural pubs.



Map 1: The river bioregion is situated within the South West of England, a Celtic rainforest ecoregion. The bioregion encompasses ~420 km² of low-lying, predominantly agricultural land.
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Helen, a participant, “as-kestrel.” River Tone project participants were tasked with experiencing risk from their chosen non-human animals’ perspective.
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What we learned was that giving each person a real connection to one place and one animal at the very first meeting worked really well for keeping people engaged. This small step changed how people saw the project: not as something happening near them, but as something they belonged to, alongside a non-human neighbour. Small changes in language helped, too: talking about “people of this place” or “the river community,” rather than more official terms, meant that the group’s identity was tied to the bioregion, not a postal code. We continually reinforced this by showing the 3D map of the bioregion with annotated names plotted at their locations.

We built a steady rhythm for when the group would meet: 8 in-person gatherings, 6 online catch-ups, and 24+ fieldwork visits, which led to over 10 informal meet-ups and enabled us to reach 80 percent of the river catchment. Of the 30 people who registered an interest, 26 engaged with the project, and 14 stayed the course through to the final stage, where they developed 28 Courses of Action (CoA) for responding to the risks identified. These CoAs lay the foundation for a community-led, 30-plus-year operational plan for landscape-scale ecological restoration, river rights, and the recognition of non-human contributions to decision-making.

Throughout, participants brought their own skills to the effort—writing, art, campaigning, talking to neighbours, and engaging with local councillors—and many said the project changed how they felt about the river and how they talked about it with friends and family.

What needs to happen now: Future practitioners of this work should be prepared to (re)build social infrastructure around and within a given bioregion. In many settings, communities aren’t (or are no longer) organized this way. This means moving recruitment and activities away from the usual population centres and into the places a river (or a mountain or a forest) actually runs through. It also means finding someone from the community—ideally someone with deep, first-hand knowledge of the place and its wildlife—to lead this work and act as the connective thread between the project team, the people, and the land itself.

A replicable asset coming out of this project is a “River Group” model: a sovereign ecological community formed at the right unit for nature-centric systemic risk response. To set one up on another river:

1. Set and map (visually) the bioregion as the area of recruitment.
2. Target recruitment efforts for maximum distribution across the bioregion.
3. Ask everyone to choose a non-human animal partner to work with from day one.
4. Plot (again, visually) people and animals on the map to reinforce system relationships.
5. Run a steady cadence of gatherings, check-ins, and in-place fieldwork.

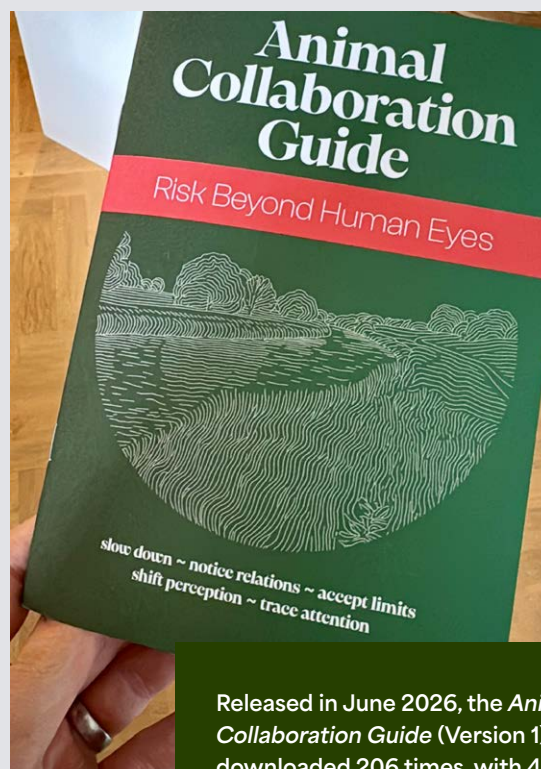
This is achievable by informal groups, even without initial external funding. What matters most is matching the way you bring people in to what you actually want them to do, and protecting real time for the slower, deeper work of learning to see through another species’ eyes—because that’s what helps people feel it’s theirs and discourages attrition.

LESSON 4

There are important differences in how risk is perceived and experienced by non-human animals

What happened: Different sensory, physical, and social worlds mean that important risks and forms of harm can remain invisible to human-centred frameworks and analyses. Our research structures inquiry around five core dimensions of risk for non-human animals: sensory disruption, restrictions, physical injury, mental injury, and diel rhythm disruption. We broke these down further into sixteen subtypes of risk, including trauma and toxicological risks that incur physical harm; mental injuries arising from chronic and acute stress; loss of critical knowledge through the disruption of social learning pathways and the erosion of culturally transmitted survival skills; and restrictions that lead to a forced alteration or narrowing of behavioural options and expressions. No other risk assessments we know of take this comprehensive approach to considering the real and multidimensional risks faced by non-human species.

Non-human species experience the world differently from humans. Our research is the first to provide a structure—via the [Core Ontology](#) we developed for this project—to systemically identify the full extent to which their experiences could differ biologically, anatomically, and socially. Take vision, for example: Only 4 of the 5 non-human animals we worked with had eyes. They can process and take cues from visual information in their environment about risks; however, they each have completely different fields of view: Atlantic salmon can see 350 degrees, red deer 300 degrees, kestrels around 250 degrees,



Released in June 2026, the *Animal Collaboration Guide* (Version 1) has been downloaded 206 times, with 434 views (12 June to 21 September 2026).
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and otters 220 degrees (compare this with the ~220-degree field of view of humans). For the sensory perception of vision alone, we identified 8 different dimensions (for example, photo-receptivity, depth perception, and acuity) with 12 different subtypes (for example, ultraviolet, polarized, infrared, or trichromatic photoreceptivity) that have a material effect on how visual risk information can be perceived. Yet we currently design only for human eyes. While we made these dimensions explicit and incorporated them into the [Animal Collaboration Guide](#) (see Lesson 6), this project was not aimed at investigating specifically how biological, morphological, phenological, and other differences affect risk perception.

What needs to happen now: Countering anthropocentrism in risk assessments requires these differences to be taken seriously. Across all 8 risk dimensions and 16 subtypes, our early analysis shows significant risks, including risks at catastrophic levels, suggesting that the risks faced by non-human animals and the surrounding ecosystems are underestimated. Moreover, we identified previously unrecognized risks, such as vibratory sensory disruption in otters, where vibration—for example, from a rail line—overlapping with a target sensory cue—for example, fish movement—could potentially reduce or prevent their ability to detect or discriminate food signals. Research on the species-specific, systemic, and cumulative effects of such risks, as well as their scale—for example, volume, frequency, and distribution—is extremely limited ([Wood et al., 2026](#)). Yet “sensory disruption masking” is just 1 of 15 other subtypes. In our animal-centric testimonies, all four physical injury risks—predation, trauma, toxicological, and epigenetic—were present. Given that protocols for measuring wild animal mortality still lack rigour and widespread adoption ([Cristescu et al., 2022](#)), that the types of risks assessed are limited to known vectors, and that risks are not assessed summatively or systemically, it is almost certain that the overall level of harm and loss suffered by the wild non-human animals of the bioregion is underassessed.

Key risk factors, such as river obstructions, need to be assessed systemically and prioritized according to their significance to animals themselves. For example, through this project we identified that the River Tone bioregion has at least 337 river obstacles that cause compound risks (sediment buildup, energetic costs, blocking of passage, and toxin accumulation, amongst others), which are then further compounded by the 455 road–river intersections and the almost complete lack (~00.01 percent at 30 metres) of Ecologically Functional Riparian Zones (or ERZ; [Lind et al., 2019](#)) in the bioregion. Risk assessments for catchments therefore need to be both systemic and non-anthropocentric. The risk associated with not applying these approaches is likely to increase the chance of ecosystem collapse.

LESSON 5

Treating people as local ecological knowledge holders changes their relationship to place and risk

What happened: Nature-centric risk work requires us not only to rethink whose knowledge counts but also to consider how that knowledge is used and to what end. At our first in-person gathering, we held a 15-minute conversation on relational ethics, built around a number of scenarios and three questions: 1) What counts as a contribution from the animal each person was working with, and how should it be recognized? 2) How might each person faithfully represent the non-human animal they were working with? and 3) How did they want their local ecological knowledge of the river to be used, or not used, by others? These scenarios helped test the group’s collective conviction.



From the first online engagements and inductions (top: January and February 2026) to the first in-person gathering (bottom: 18 February 2026), we reinforced two principles: 1) river is a system; and (2) by being here together while staying with your particular place on the River Tone, we can achieve systemic effects. Throughout this project, found objects (e.g., a stag antler from Lydeard Hill) reinforced place-based specificity and held symbolic importance. Copyright © ASRA, 2026

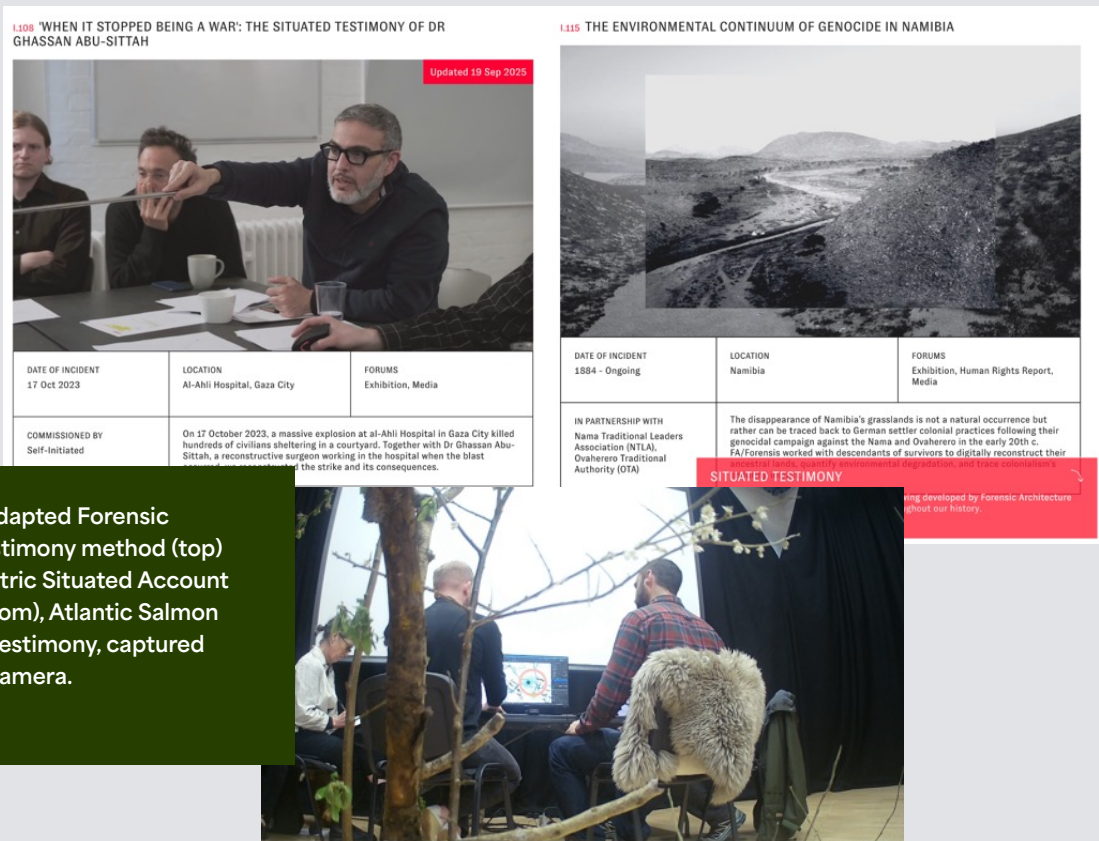


By treating participants as holders of local ecological knowledge, we created space to speak to their connections with the land in a context where those connections are otherwise seldom acknowledged. This placed ownership of the project with the participants, their animal partners, and the river, and helped reinforce the relationality already present between people, non-human animals, and place. We continued to reinforce this principle by co-drafting an ethics statement that set out how participants wanted themselves, their non-human animals, and their knowledge contributions to be used.

We learned, too, that scenarios are a useful tool at the beginning of a project for addressing difficult ethical questions around contribution, representation, ownership, and the use of knowledge. These ethical positions can then be strengthened through practical and legal mechanisms. One emerging example is Ecological Attribution Rights (EARs), a proposed new category of intellectual property (IP) rights developed by Lawyers for Nature with input from the River Tone project. EARs would enable animals and ecosystems to be attributed authorship rights over knowledge they produce—for example, a salmon’s migration data or an otter’s ecological “readings.”

What needs to happen now: Future NCA to risk projects should plan and structure research and action in ways that consistently reinforce, respect, and honour local ecological knowledge, particularly in communities that do not consider themselves Indigenous. Rather than treating local people simply as participants or sources of information, practitioners should recognize them as embedded knowledge holders and surface the relationality they already have with the non-human species of their place, including by reminding people of their multispecies coexistence.

This pilot identified opportunities to leverage existing cracks in legal frameworks, including UK copyright law, to strengthen more-than-human ethical positions. Legal scholars and innovators can build on this work by developing IP rights approaches capable of challenging epistemic injustices experienced by non-human species and ecological communities.



LESSON 6

Animal-centred fieldwork changes how people perceive risk

What happened: De-centring the human is not only an analytical exercise; it requires practices that disrupt our habitual ways of seeing. Each participant selected and collaborated with one of five non-human animals to explore river risks through that species' perspective. To support this, we co-developed an [Animal Collaboration Guide \(ACG\)](#) with our project co-leads at the University of the West of England (UWE), adapting the More-Than-Human Lens methodology for animal-centred fieldwork. Combining species knowledge from the Core Ontology with practical exercises, the guide was designed to disrupt habitual human ways of seeing and surface risks that might otherwise remain invisible. It also supported participants to bodily engage with sensory or physical dimensions they might share with their chosen animals (for example, sensing light and heat), as well as those in which they differ (for example, not having wings or air-filled bones).

A key part of the method—situated attention—was repeated following the ACG exercises in a disciplined, sequential way. Participants learned what mattered to their chosen animal, then returned to the landscape to notice the relations, frictions, and thresholds shaping its life. Over time, this slowed people down and changed what they noticed. Participants then translated these experiences into “animal testimony” through Animal-Centred Situated Accounts inspired by the work of Forensic Architecture. (See our blogs “[Learning to Speak Risk Differently](#)” [11 June 2026] and “[Turning Animal Testimony into Evidence](#)” [09 July 2026] for more about the process and purpose.)

No one claimed to speak for the animals; the accounts were partial, carefully qualified, and situated alongside ecological and scientific evidence. But the process changed how participants

experienced and weighed risk within familiar landscapes. In an interview with *The Guardian* ([June 2026](#)), one participant, Anita Roy, commented: “We mostly think of nature as biodiversity, a concept, but this made it so personal, so emotional, and so horrific. It was hard to feel how we’ve made the world a really hostile place for all these individual creatures. When that’s you, you really feel it. It was quite galvanizing.”

What needs to happen now: For those already working with More-Than-Human methodologies, the ACG processes can help prevent centring “the workshop” from becoming the main site of the work. A deeper shift happens through repeated encounters with participants’ own places and ecological communities that disrupt habitual human rhythms of attention. Future NCA work should therefore build in repeated “desk–field” feedback loops that slow people down, hold attention on what would normally be overlooked, and allow experience in the landscape to unsettle what people thought they knew. Workshops should help structure and translate that experience, not substitute it. The continued use of digital (or visual) plotting of accounts on a map further reinforces the importance of individual experiences as part of a broader system, without reducing the importance of either view.

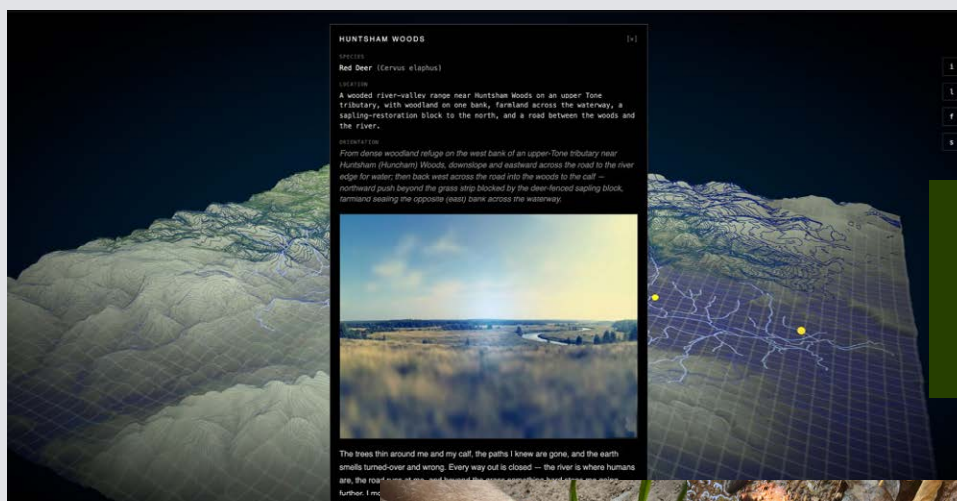
LESSON 7

3D geospatial representation of systemic risk is technically challenging but promising for NCA

What happened: To see the whole system, we need ways to hold together different forms of knowledge and different experiences of risk. Over the course of the project, we developed a digital platform to capture data and spatially represent insights as they emerged. Community critique across multiple workshops drove its design and iteration. We initially set out to merge two prototypes—the More-Than-Human Lens (MTHL) toolkit and ASRA’s STEER—into a Nature-Centric Systemic Risk Tool (NCSRT): a 3D digital elevation model of the catchment supported by a functional-trait ontology. As the work developed, we found that core parts of this ambition exceeded what the pilot could deliver, and we therefore rescoped the demonstrator.

What we developed instead is an [NCA Demonstrator](#) that brings together testimony, geodata, and ecological knowledge gathered through this six-month project to show where risks are building, how they connect, and how different species are affected. Through an interactive 3D map of the River Tone bioregion, users can explore information spanning multiple species, locations, and forms of evidence. The platform makes complex relationships easier to see and supports a more connected understanding of risk across the landscape. It also highlights where action could reduce harm across the river system. Users are encouraged to explore systemic risk through the lives and senses of otters, deer, earthworms, salmon, and kestrels.

The challenge was not simply to map risks, but to connect forms of knowledge that conventional risk tools often keep apart: participant testimony, ecological and spatial data, animal lifeworlds, systemic relationships, and possible Courses of Action. Representing these geospatially helped preserve an important feature of the method: Risks remained situated in particular places and ecological relationships rather than becoming detached, abstract data points. Achieving this required much more than GIS or software development. Our small, blended team drew on product thinking, user research, information architecture, development, game and spatial design, facilitation, and speculative worldbuilding. The work also surfaced significant technical and design challenges, including how to connect different forms of



Screenshot of our Red Deer 01 risk account, drawing out the intensity of her confinement and denial of access to her riparian woodland cover—and calf. Copyright © UWE and ASRA, 2026

Thomas and Phil during a digital capture session on Back Stream near Watts Bridge, River Tone, using the LilPopo Microscopic Camera and Lom Geofón to capture micro and seismic movement audio. Shot on an iPhone 15 Pro Max. Copyright © River Tone, 2026



knowledge and sensing, trace possible action chains, and use scientific sensing to convey aspects of animal experience without claiming to reproduce it.

What needs to happen now: Nature-centric systemic risk technology needs to be developed as a multidisciplinary field, bringing product and software teams together with ecologists, ethologists, environmental scientists, operational planners, and the communities of the places being assessed. Future work should test how environmental data, local monitoring, and situated knowledge can be brought together in ways that give communities greater capability to understand and act on risks within their own bioregions. Funders have an opportunity to support multidisciplinary technology teams across the full development cycle—from research and method design through to engineering and deployment—so that these capabilities can move beyond experimental demonstrators into usable ecological infrastructure. The [NCA Demonstrator](#) also shows that advanced planning tools are not only relevant to major infrastructure and development projects; they can support community-led planning, local decision-making, and collective action.

What's next



RED DEER

Red deer move through the River Tone's woods and uplands tuned to motion at the horizon and scent on the wind. They pause mid-bite to listen, align their bodies north-south by the Earth's magnetic field, and shift their whole day to dodge heat and human pressure. As large herbivores, they shape the woodland edges and grasslands the catchment depends on.

These lessons are a starting point, not an end point. We want to test them in other places, with different species and systems, and alongside people working across risk, ecology, policy, technology, law, and community practice. We welcome others to challenge these ideas, apply them in different contexts, and work with us to develop the methods, evidence, and capabilities needed to advance nature-centric approaches to systemic risk.

To our knowledge, this is the first project of its kind: a systemic risk assessment built not around human priorities, but around the senses and needs of the more-than-human species that share a bioregion. In doing so, the first-ever Risks Beyond Human Eyes pilot opens a genuinely new frontier in how systemic risk can be understood, demonstrating that assessment and response can move beyond human-oriented models to centre the perspectives, dependencies, and vulnerabilities of more-than-human life.

By working with and for the species of the River Tone, the project revealed how risks spread and cascade, offering deeper insight into resilience across the catchment. As ecological collapse accelerates systemic risk, the case for this approach becomes more urgent, not less. Drawing on the findings from this work, ASRA is developing a new report (expected in early 2027), arguing that existing risk frameworks—even the most progressive—remain deeply anthropocentric and potentially reinforce the very structural factors driving today's



People of River Tone develop Courses of Action to respond to the systemic risk identified during the Animal-Centric Systemic Risk Response session, 27 April 2026.
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polycrisis. Anchored by a collection of bold key messages, the report will argue that centring ecosystems and non-human species in systemic risk frameworks is not a peripheral concern but a strategic imperative—one that reveals entirely new risk types, challenges existing risk priorities, and demands a transformational shift in how the field thinks and operates.

This is pioneering work, and it cannot be pioneered alone. We invite others working across risk, ecology, and community resilience to follow this work, challenge it, build on it, and help shape what comes next.

ENDNOTE

- 1 Population estimates are for illustrative purposes. We wanted a figure to communicate just how small a percentage of the world's population humans make up. We could be significantly off in our estimate, but we have high confidence that non-human animals vastly outnumber humans.

To arrive at a rough estimate of the total number of non-human animals, we multiplied (a) the estimated number of non-human animal species (~260) by (b) their estimated abundance, then adjusted for (c) the percentage of suitable habitat within 414 km² bioregion, in line with the EA Operational Catchment. For the total human population, we used an estimated population density of 2.22 people per hectare, adjusting from the older, Somerset-wide ONS data (2011), which estimated 1.5 people per hectare. This gives us an estimated 92,000 humans and 1.52 million non-human animals.

Definitions of Terms Used

This project pulls on many disciplinary perspectives—from eco-phenomenology to dynamic systems, from movement ecology to speculative ethnography, and from Indigenous scholarship to critical animal studies. As this project is a first attempt to explore what works and try things out, the language we use can sometimes be confusing. The honest reason for this is that “nature-centrism in systemic risk” is still conceptually unsettled and embryonic as a field. The terms we use and how we define them follow.

Animal-centric/animal centrism: See **nature-centric/nature centrism**, but used specifically when working with a non-human animal.

Bioregion (bioregionalism): A geographical area with coherent and interconnected plant and animal communities, as well as other natural characteristics (often defined by a watershed), together with the cultural values that humans have developed for living in harmony with these natural systems (see Map 1).

Catchment (river): An area of land where all precipitation, surface runoff, and underground water drain into a single shared river.

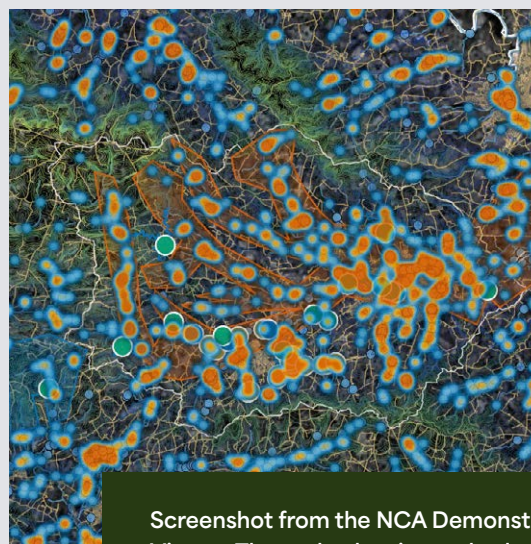
More-than-human: Coined by David Abram in his 1996 book *The Spell of the Sensuous*, this term for Earth’s countless other species and ecological forms challenges the idea of human exceptionalism, acknowledging life on Earth as a wider whole that includes and exceeds the human.

Nature-centric approaches (NCA) (to systemic risk): Any approaches to systemic risk assessment or response that centre on non-human understandings, logics, desires, and dynamics.

Nature-centric/nature-centrism: The centring of non-human understandings, logics, desires, and dynamics. Nature-centrism almost always involves deliberate and concentrated efforts to disrupt human biases.

Non-human (animal): Any species other than *Homo sapiens*; used deliberately to acknowledge that humans are animals. In this report, non-human animals refer primarily to our partner animals: red deer, European otter, common kestrel, earthworm, and Atlantic salmon.

Risk: The likelihood and severity of something of value being harmed.



Screenshot from the NCA Demonstrator Data Viewer. The scale, density, and volume of non-human animal risk across the bioregion is evident. Note that the river sections highlight catastrophic risk, mainly (but not exclusively) due to the extinction risk faced by the River Tone’s Atlantic salmon.

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Sister rivers: Rivers with shared geographical, hydrological, ecological, cultural, and/or historical connections to the north, east, south, and west of the River Tone, within a ~30-metre proximity.

Systemic risk assessment (SRA): An assessment of the cascading, compounding, and potentially catastrophic risks to the system(s) of interest.

Systemic risk response (SRR): A coordinated set of responses that seek to compound interventions to achieve a disproportionate reduction in risk.

Systemic risk: A type or class of risk (see **Risk** above) characterized by cascading and compounding effects that can cause potentially catastrophic harm, including whole-system collapse.

Threat: The intention and capability to cause harm to someone or something.

About the Accelerator for Systemic Risk Assessment (ASRA)

ASRA (the Accelerator for Systemic Risk Assessment) aims to mainstream systemic risk assessment in policy and decision-making in response to current and future challenges. Hosted by the United Nations Foundation, this independent initiative advances the field and practice of systemic risk, and advocates for transformative action for the prosperity of all people, societies, species, and ecosystems.

Learn more at www.asranetwork.org
Contact: hello@asranetwork.org

DISCLAIMER

This analysis was produced by ASRA staff and does not necessarily reflect the views of the full project team. This document is informed by: [Patton, M.Q. \(2001\)](#) on utilization-focused evaluation and high-quality lessons; [Davies, R. \(2009\)](#) on identifying and documenting lessons learned.

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