



# SOMERSET

## Eel Conference



## Welcome

On 5 July 2024, the Somerset Eel Recovery Project convened at the Redbrick Building in Glastonbury for the first Somerset Eel Conference, bringing together regional stakeholders in European eel for a programme of community engagement and knowledge exchange.

From advancements in eel monitoring using eDNA technology to innovative strategies for incorporating real-world ecology into classroom settings, the speakers shared research updates and practical conservation insights with a view to accelerating the eel's recovery.

Whether you attended the conference in person or are engaging with the material for the first time, this booklet

Upon us now is a great opportunity to build on the work in hand relating to the recovery of the European eel in Somerset and beyond.

Vanessa Becker-Hughes

should serve as a rough guide to the themes and concepts explored through the day.

It is hoped that it will inspire continued exploration and collaboration in the margins between the Arts and the Sciences; informing trans-disciplinary research with the potential to inspire the next generation of conservations to consider the eel.

Because to slow, to stop, and to reverse the decline in European eel populations will rely on grassroots education, outreach, and conservation work in all parts of its range.





**UPPER LEFT**  
Vanessa Becker-Hughes, co-founder of SERP



**UPPER RIGHT**  
Event attendees en route to a nearby weir



**LOWER RIGHT**  
Preparations for the river blessing





**UPPER LEFT**  
Guests taking their seats for the first lecture

**UPPER RIGHT**  
Fine art prints by Julia Manning

**LOWER LEFT**  
Sculptural eel cake by Dan Britton





#### UPPER LEFT

Eels being released over a local barrier



#### UPPER RIGHT

Vanessa preparing the river blessing

#### LOWER RIGHT

Wetlands on the Somerset Levels



Years of research  
rich in excitement  
and suspense:  
disappointment  
alternating with  
ever-encouraging  
new discoveries.

Johannes Schmidt

## Science

The theory might date back to the first few years of the twentieth century, but in 2022 there remained only very limited evidence that *Anguilla anguilla* begins and ends its life cycle in the Sargasso Sea. Whilst initial attempts at tracking its trans-Atlantic migration using geo-tags had shown promise, they had only been able to record movements as far as the Azores. Because here more than anywhere there were issues with attachment failure, which meant the monitoring capabilities were lost.

By 2023, it was recognised that a research project in the archipelago would be necessary to pick up the study where it left off and set the scientific record straight.

Speaking at the conference, Andy Don recalled how he and his colleagues at the Environment Agency travelled to the Azores in search of silver eels en route to their spawning grounds in the Sargasso Sea. He reflected on the challenges associated with locating and handling wildlife in such a remote and poorly connected landscape, exposed to extreme weather. And he offered insights into the results of his three consecutive trips to the islands.

In total, twenty-three tags were attached to the silver eels, of which twenty-one recorded substantive data via the ARGOS navigation system. The tag pop-up locations of each confirmed the south-westerly trajectory of their migration in the direction of the Sargasso Sea. Five were actually within the boundaries of the spawning grounds, and one was at a depth considered suitable for reproductive activity. Thus, the study provided the most compelling evidence to date verifying Schmidt's theory.



Not many people  
write books about  
eels, I can't think why.  
Personally, I think they  
are wonderful fish,  
as long as they aren't  
attached to my line.

Tom Fort

## History

The European eel has played an important role in the history of Somerset, and England more generally. It is featured in the Bayeux Tapestry, writhing around the feet of Harold Godwinson, at a time where the English were more partial to eel meat than roast beef. It made appearances in the more grotesque and absurdist passages of Shakespeare, Dickens, and Chaucer. At one stage, it made up fifty per cent of England's freshwater biomass, and was the favourite dish for Bishops, Kings, and Abbots on Fridays, when it was prized for its meat-like flesh.

In his opening remarks for the conference, Andrew Kerr of the Sustainable Eel Group emphasised the importance of understanding the historical significance of society's relationship with the European eel. He also made the case for rebuilding that special relationship, so that eel conservation might be understood as a positive driver for social and economic as well as environmental change.

The Sustainable Eel Group identifies the integration of social, economic, and environmental needs as an essential component of conservation practice. As such, it has supported and promoted small but impactful projects which involve diverse community groups in the effort to monitor, research, and promote the European eel.

Some of these initiatives were rooted in scientific research, such as the eDNA sampling programme spearheaded by the Somerset Eel Recovery Project. Others, such as traditional skills workshops, oral histories interviews, and the illustration-led 'Eel Suitcase' campaign, employed history and culture to raise awareness and drive change.

Who do you think the artist is? A political being, constantly alert to the heart-rending, stirring or pleasant events of the world, taking his own complexion from them.

Pablo Picasso

## Art

Art can play a powerful role in raising awareness about social, political, and environmental issues, including wildlife conservation. Besides being a highly visual medium with an immediate psychological impact, it has the capacity to affect people emotionally in a way that science and traditional reporting methodologies do not, providing an alternative means of communication for lobby groups campaigning for positive policy change.

At her recent conference presentation, the wildlife artist and painter-printmaker Julia Manning underscored the potential of Art as a catalyst for advocacy and a conduit for tangible social and political change. After taking her audience on a tour through her 'Decline of Eel' print series, which explores the threats the eel encounters as it journeys into and out from European freshwater, and reflecting on the sources of her inspiration, she reflected on instances in which her Art had elicited shock, horror, and a determination to turn the eel's fortunes around.

In displaying the 'Decline of Eels' series at special events hosted by government agencies, special interest groups, and trade organisations, Julia has affected the perspectives of both the public and policymakers. Key decision makers have been forced to confront potentially reversible policy developments simply by looking at her artwork, and cross-referencing the content with the captions, provided by the Environment Agency's voice on eel, Andy Don.

More profoundly, she has brought the decline of eels closer to home, showing that the fight against Hinkley, or for expanding Steart Marshes, is the fight to save eel.



In fine, we should treat our ancient buildings as monuments of a bygone art, created by bygone manners, that modern art cannot meddle with without destroying.

William Morris

## Architecture

The material legacy of the eel fishing industry is not what might be expected, given its historical breadth and scale. There has been limited effort to conserve remnants from this increasingly forgotten component of English national identity. But the insights that its ruins provide into shifts and changes in attitudes towards sustainability over historical time are invaluable. The story of eels and architecture is one which makes for interesting listening, especially in a world intent that hard-engineering is the solution to sustained economic development, flood defence, and positive macro-environmental change.

At the conference, Alexander took his audience on a whistlestop tour through the story of eels and architecture. He pinpointed watermills, parterre gardens, and tithe barns as important centres for historical enquiry. And he drew attention to buildings designed with the expressed purpose of harvesting, processing, storing, or even exhibiting eel, with a view either to short-term profit, or to social and economic viability over historical time.

For Alexander, this research is as much about generating interest in the places at the centre of the eel's story as it is about understanding how cultural relationships have changed. The case for restoring historic buildings and landscapes is to a certain extent more compelling than the environmental argument for preserving fen, bog, and swamp landscapes. Thus, culture has the potential to be harnessed for ecological as well as social and economic purposes, providing the impetus for habitat restoration and more extensive, funded interdisciplinary research.

There is writing  
on local history  
across Europe, on  
eel marketing and  
trade, but few allow  
quantification of  
volumes involved.

Willem Dekker

## Policy

Fisheries management policy has a complicated history in Europe which reflects the inevitable conflicts between social, commercial, and environmental drivers. It has been adapted over time in line with the industrially-induced shift from long-term to shorter term economic strategy planning and has variously worked in favour or to the detriment of the European eel depending on the political theories and motivations in ascendancy at the time.

Originally focused on marine biology, Willem Dekker has latterly expanded the scope of his research to explore this subject from a natural history perspective; and to determine the relative efficacy of twenty-first-century eel conservation initiatives by the means of comparison.

'From Pest to Protected' offered visitors to the conference an historical, highly international account of protection policies for the European eel. It also provided a contextual framework through which to examine the relative efficacy of European Union attempts to standardise policy.

Willem would proceed to interrogate the question of why the Eel Regulation has been successful where earlier attempts to protect the eel stock had failed. He cited the importance of pan-European collaboration on the species and the awareness that it had raised. Crucially, though, he stopped short of suggesting that the policy was without its flaws. While the Eel Regulation triggered immediate action in all parts of *Anguilla anguilla's* range, he ultimately concluded that further progress would only be made if appropriate feedback was given to individual countries on the effectiveness of their measures so far.



The elvers learn  
from the children,  
and the children  
from the eels. The  
young teaching the  
young: what could  
be better than that?

Hannah Strode

## Education

This year, the Somerset Eel Recovery Project's flagship education programme evolved in scale and approach. As many as fifty-nine primary, SEN, and secondary school classrooms signed on for 'Eels in the Classroom' in Spring 2024, together with a number of local community groups and societies. And Hannah Strode, an experienced educator with an academic background in Anthrozoology was brought into the fold to oversee its metamorphosis into something truly extraordinary.

For school children across Somerset, from Porlock in the west to Frome in the east, Hannah is now 'The Eel Lady'; the mysterious teacher-*cum*-zookeeper who travels across the county with tanks, filters, and eighteen-month-old anguillid eels in tow. She has become a familiar sight, stopping by the classrooms for the initial set-up of the 'class tanks' - sloshing buckets of water in hand - but also to support with training in eel husbandry and science.

Her reflections at the conference demonstrated that the experience has been mutually rewarding. Inasmuch as the children have learned about the life cycle of the eel, and the various factors associated with their decline, Hannah has been exposed to new perspectives on this critically endangered species. Where many of her friends and colleagues viewed the eel issue as a great tragedy, but one very much belonging to an unfamiliar natural world, the two-thousand young people she worked with through the course of the programme had a tendency to attribute these creatures human characteristics. She, too, now views conservation through a heterarchical lens.

Environmental DNA techniques are gaining popularity for ecological monitoring because they are sensitive and less invasive.

Laura Weldon

## Technology

Generally, eDNA, or 'environmental DNA', refers to the genetic material organisms shed into their environment, which includes skin cells or scales, phlegm or mucus, and waste, among other biological substances. Researchers collect samples of water, soil, or plant matter and then analyse the DNA found within these samples to confirm the presence of a specific species within that location. It is a technology that the Somerset Eel Recovery Project has been using since its foundation in 2023 as part of its commitment to engaging local people in conservation.

At the conference, two specialists spoke on the applicatory potential of this technology in eel monitoring efforts: Laura Weldon, a molecular ecologist who recently founded The eDNA Consultancy; and Abigail Mackay, a researcher at the Wildfowl and Wetlands Trust. Their respective lectures approached a common consensus.

Initially, Laura proposed that eDNA studies provide a less invasive, and more effective alternative to traditional methods such as netting and electrofishing, which have the potential to stress the eels and disrupt their habitats; that the technology required limited human and financial resources than its counterparts; and that only the analysis of rivers and streams using this technology could detect the presence of eels when they were concealed from view.

Abigail then expanded on these points by discussing the broader implications of eDNA in conservation work; and demonstrating that this technology could be applied at scale to identify barriers to eel migration and track the efficacy of associated habitat restoration campaigns.



Eels hurrying to the  
sea sometimes crawl  
for a mile or more  
across dewy meadows  
to reach streams  
that will carry them  
off to salt water.

Annie Dillard

## Land Economy

Landscapes are by their very definition fluid, hewn out of the earth by glacial ice and relentless weathering from raindrops, rivers, and seas. Over time, however, the situation has shifted and changed, like tectonic plates. Rigid boundaries have been established to distinguish valuable arable 'land' from an alien watery 'other', and as the former has encroached upon the latter, wetland habitats have retreated to the point of obscurity. For a fish like European eel that relies on land animals for predation and thrives in the grey area between saltwater and freshwater, river and bank, this is an alarming trend.

Two speakers raised this issue at the conference: one from a scientific perspective, and one through the lens of community-led ecosystem restoration. Taken together, their contributions made for inspirational listening.

Where Prof. Mark Everard proposed that removing hard barriers which block lateral movement between water and dry land could support with the recovery of eel stocks, citing recent research on changes to Somerset's historical waterways to substantiate his claims, regenerative farmer Dan Britton offered up a topical case study where a new water course is being returned to its natural state.

At Plotgate Community Farm, every care is being taken to facilitate soil carbon enrichment, reduce surface runoff, and reverse ecosystem loss. As such, the water meadows are being restored to their previous extent. It is thought that this will provide the means for eel to bypass barriers on their way into and out of Somerset's rivers, whilst simultaneously supporting natural predation patterns.

No individual  
raindrop ever  
considers itself  
responsible for  
the flood.

John Ruskin

## Philosophy

It goes without saying that the Climate Emergency poses an existential threat to all animal life, human and non-human alike. Climate scientists estimate that a temperature rise of just three degrees would see the displace more than one billion people, and the full or partial collapse of the world's remaining functioning ecosystems. But the effects are sure to be felt more quickly, and more intensely by the critically endangered eel.

As the patterns of the gulf stream contort and change, the indications that it might one day simply switch off are becoming all the more transparent; there are signs that in ten, twenty, thirty years, *leptocephalus* will be unable to make their Odyssean journey, cast adrift and alone.

In 'Eels: A Lesson in Shapeshifting', Emily Ostler offered a fresh outlook on the Sixth Extinction. She invited her audience to think critically about their position in the world vis-a-vis the eel. She issued something of a call to action in suggesting that the intense emotions triggered through reflection on the eel's plight should be channeled towards conservation initiatives. And then she shared her own experiences of the Anthropogenic condition; her sense that she, like the eel, needed to grapple with fate.

A descendent of Norwegian immigrants, Emily spent the first half of 2023 in a self-crafted pilgrimage of her heritage, especially as it pertains to the waters. On this journey, she worked with eel conservationists' elver men, and others involved in finding long-term solutions for the European eel. She is currently completing a book about this journey, focusing on the role of eels in it.



