

COP

15

2022



**ENGINEERING A
NATURE-POSITIVE FUTURE**

We can make a
positive difference

Tampa Bay
Estuary Program

Value legacy and creating
better outcomes



“ Our economies, livelihoods,
and well-being all depend on
our most precious asset: Nature.
We are part of Nature, not
separate from it. ”

Sir Partha Dasgupta

Final Report - The Economics of Biodiversity:
The Dasgupta Review - GOV.UK (www.gov.uk)



ATKINS

FAITHFUL+GOULD

Members of the SNC-Lavalin Group

Engineering a nature-positive future

PHILIP HOARE - PRESIDENT AT ATKINS (MEMBER OF SNC-LAVALIN GROUP)

Our planet is in crisis and nature is sending an increasingly loud SOS signal. Every day brings new devastating headlines about species on the brink of extinction, habitat loss and the harm that humans inflict on the planet.

Changing our path from nature loss to nature restoration seems an almost unsurmountable challenge, yet I feel optimistic that the tide is turning, and events such as COP15 are providing vital focus to find new solutions and place nature at the forefront of our climate emergency.

However, engineering a nature-positive future will require international consensus to build momentum and new partnerships to develop and embed solutions: COP15 will bring together governments from around the world to agree upon a new set of goals for nature over the coming decade to bring about a transformation in society's relationship with our environment.

I'm also encouraged by the increasing numbers of clients across the world who actively seek our support to prevent harm to ecosystems and natural resources, including an increasing number who go beyond this to adopt a nature-positive approach.

Our industry has a vital role to play in tackling such a critical issue. Biodiversity is not simply a stand-alone service: from the sustainable, blue-green infrastructure we design to the climate resilience measures we recommend and nature-based solutions we implement, we must weave the principles of biodiversity into every aspect of what we design and deliver.

We also understand the power of data in gaining deeper insights, modelling outcomes and developing the most effective and powerful actions. Using these digital tools will be vital if we are to rebuild and restore in the tightest of timescales.

As engineers, we have a duty to apply a holistic approach that fully embraces nature, people and the climate in all of our projects. The right interventions in the right places deliver multiple benefits, not just restoring nature but also helping us fight, and adapt to, climate change and enhancing quality of life to address global inequalities.

As the world focuses on COP15, proudly hosted on our own corporate doorstep in Montreal, we applaud all those who are looking to be part of a nature-positive future. In this COP15 bulletin, we provide a glimpse of our clients' hopes and aspirations for COP15, along with a selection of case studies that demonstrate the impact that can be achieved, from the urban heart of London to the depths of the seagrass meadows.

They serve as a reminder of potential benefits that can be unlocked and the role we can all play in engineering a better future for our planet and its people.

We can make a positive difference

CLAIRE WANSBURY

ATKINS FELLOW, ASSOCIATE DIRECTOR, ECOLOGY: INFRASTRUCTURE

The globally and instantly recognisable WWF panda logo took its inspiration from Chi-Chi, a giant panda that arrived at London Zoo in the late 1950s. The strikingly simple image was drawn by British conservationist Sir Peter Scott, with a helping hand from environmentalist and artist, Gerald Watterson. Sir Peter's rationale for featuring the panda was powerful and practical, 'We wanted an animal that is beautiful, is endangered, and one loved by many people in the world for its appealing qualities. We also wanted an animal that had an impact in black and white to save money on printing costs.'

That logo and the reasons behind it offer a beacon of hope for me. While pandas are considered to be vulnerable, they are no longer endangered thanks to the decades of specialist knowledge in breeding and conservation efforts carried out around the world.

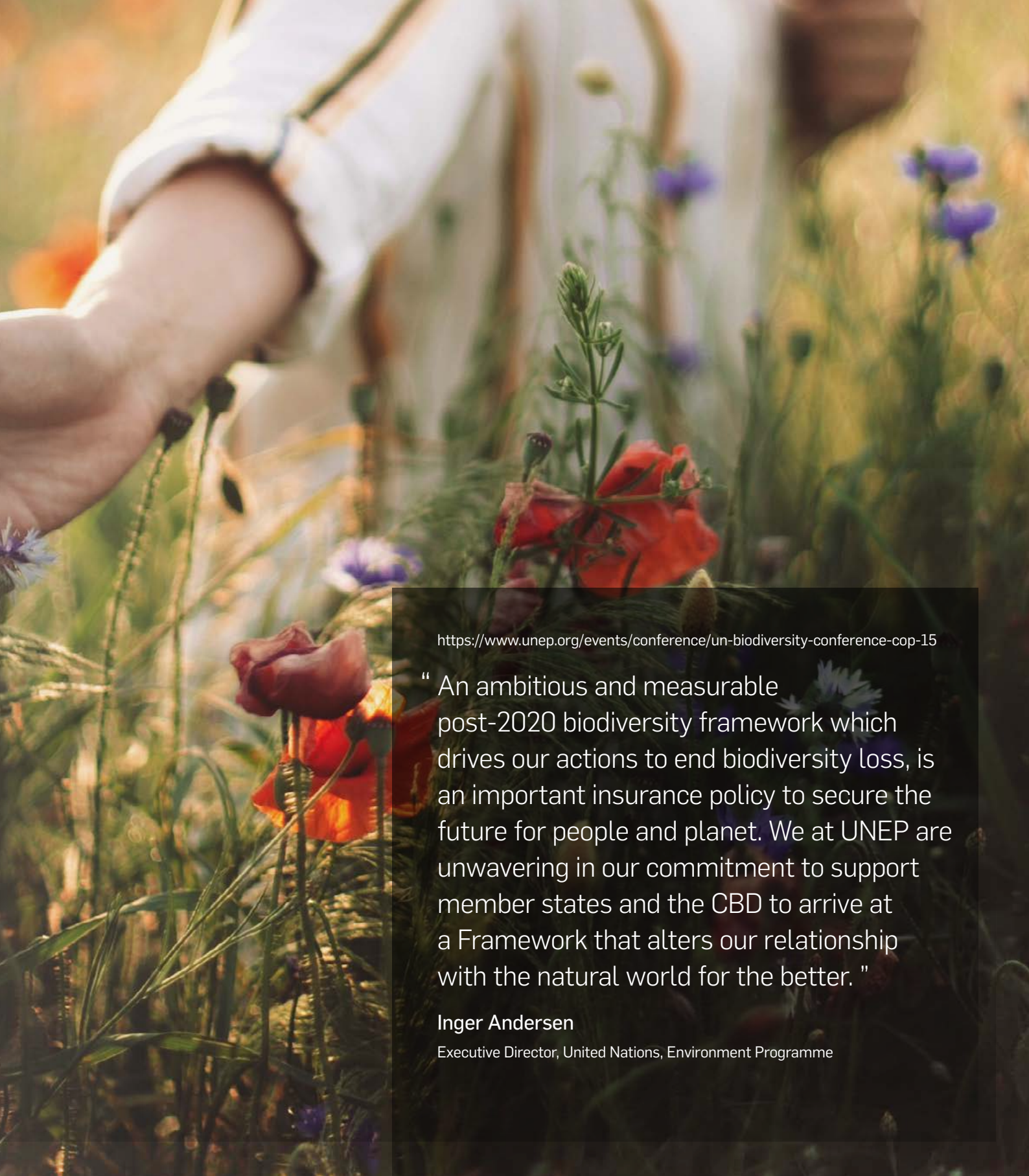
This story demonstrates that we can make a positive difference.

And that's why COP15 is so important. We know that biodiversity is critical to the health and wellbeing of the planet, nature, and us. We also know that we need to change. There is a growing movement of people and organisations recognising that a gear shift is required from slowing climate change and biodiversity loss to nature recovery.

In May this year I was proud that Atkins, part of the SNC-Lavalin Group, became a member of the Forum of the Taskforce on Nature-related Financial Disclosure. The international initiative has been established to support a shift in global finance towards more nature-positive outcomes. Atkins joined the forum along with world leading organisations in sectors such as finance and energy as well as government departments and environment specialists.

We can all do more of course, but restoring nature isn't just about protecting nature for its own sake. In particular, recognising the links between climate change and biodiversity will help accelerate positive action. Nature recovery will help in the fight against climate change and make our society and economy more resilient to the changes that are already happening; that's why I believe we can help in engineering a nature-positive future.





<https://www.unep.org/events/conference/un-biodiversity-conference-cop-15>

“ An ambitious and measurable post-2020 biodiversity framework which drives our actions to end biodiversity loss, is an important insurance policy to secure the future for people and planet. We at UNEP are unwavering in our commitment to support member states and the CBD to arrive at a Framework that alters our relationship with the natural world for the better. ”

Inger Andersen

Executive Director, United Nations, Environment Programme

Tampa Bay Estuary Program, Florida USA

SNC LAVALIN - COP15 BULLETIN - INTERVIEWEE

ED SHERWOOD, EXECUTIVE DIRECTOR, TBEP

Can you describe your hopes and aspirations for COP15?

The marine and coastal biodiversity theme of COP15 most directly aligns with the Tampa Bay Estuary Program's (TBEP) goal to protect and restore the estuary for the long-term benefit of its unique ecology and growing coastal population. As an urban estuary, our programme strives to restore critical coastal habitats important to maintain the diversity of fish and wildlife represented along our currently

subtropical coast. Our work funds direct habitat creation, invasive habitat removal and species management, and comprehensive watershed nutrient management to support the long-term stability of underwater seagrasses. As a place-based program, we hope that these TBEP-specific efforts inspire and complement other coastal initiatives that attempt to achieve the global COP15 goals. We look forward to seeing efforts increase around the world.

How is your business responding to biodiversity challenges?

The TBEP plays an important regional role in protecting and restoring the coastal watershed that drains to Tampa Bay by establishing comprehensive goals across several municipal jurisdictions and oversight from various state and federal agencies. These vetted regional goals set long-term benchmarks for maintaining underwater seagrasses, oysters, tidal flat, emergent tidal wetlands, tidal creek, freshwater wetlands and upland





Do you have a project example you would like to share?

The Critical Coastal Habitat Assessment (CCHA) is an example of a long-term monitoring program that we will utilize to better manage coastal habitats under evolving climate conditions over the next century and share the results using our online work in progress dashboard. The intent is to track habitat species transitions along discrete ecotones of the Tampa Bay coast to understand whether



habitats interspersed throughout the developing watershed. In turn, the preservation and maintenance of key fish and wildlife species is monitored and additional indices have been established to understand the comprehensive health of the estuary's ecology (e.g. benthic and nekton indices). Our primary challenge moving forward is whether our current efforts to preserve, restore and manage these key habitats and fauna will be sufficient to outpace continuing development and climate change stressors along our coast.



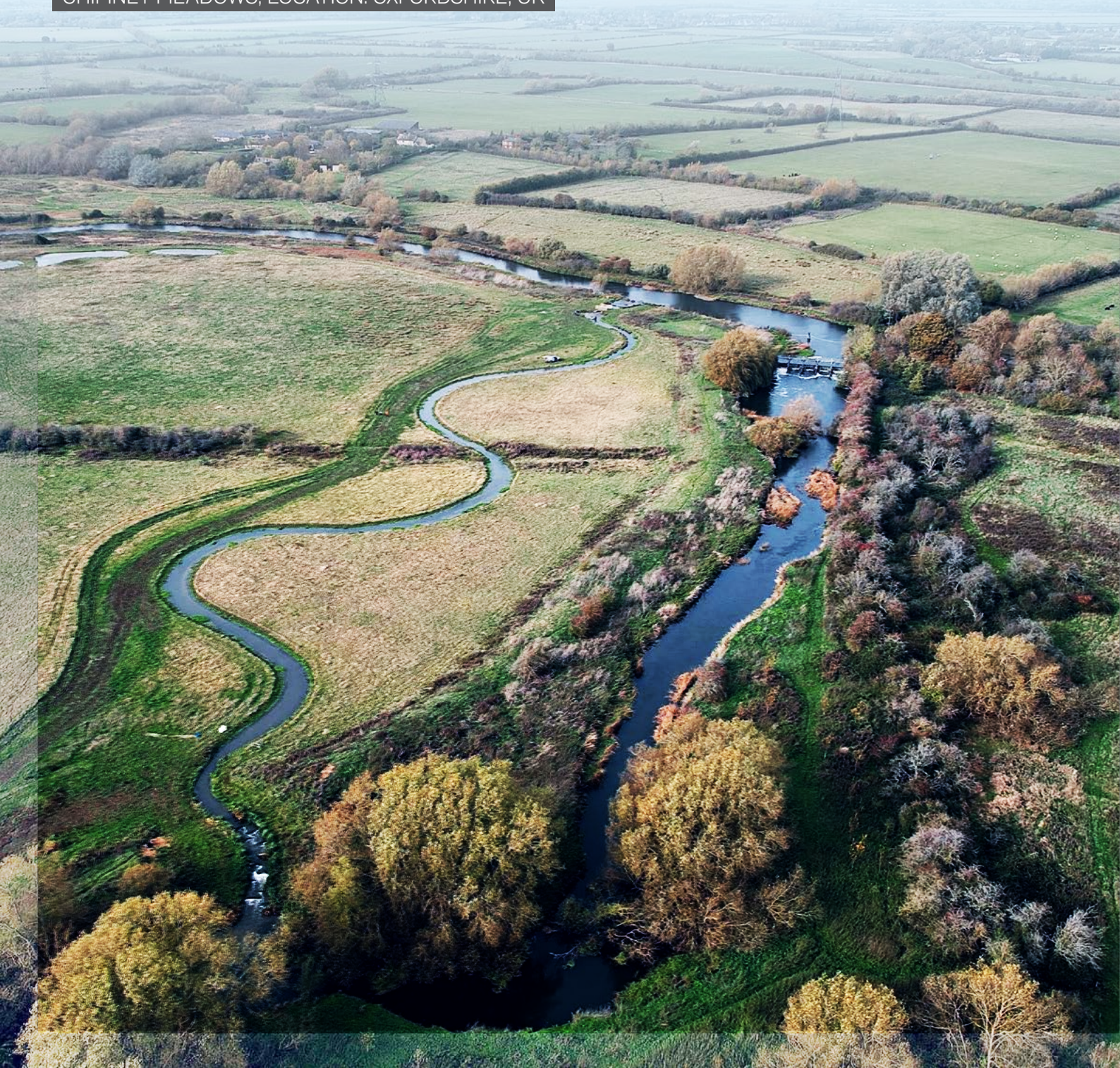
they can keep pace through accretion and/or migrate upslope to available undeveloped areas in response to sea level rise or other climate change drivers. This will provide important information as we revisit long-term restoration goals for the suite of habitats in the Tampa Bay watershed on 10-year intervals.



Making vital connections

SNC LAVALIN - COP15 BULLETIN - CASE STUDY

CHIMNEY MEADOWS, LOCATION: OXFORDSHIRE, UK



A ground-breaking wetlands restoration project to reconnect the River Thames to its floodplain has not only enhanced local biodiversity and opened up an important new 30-kilometre route for fish, it has created a blueprint to address some of the global challenges and opportunities for floodplain habitats and climate change in the future.

Along with being critical to supporting biodiversity by sustaining wetland habitats, floodplains can play a major role in resilience by alleviating the water-management challenges of droughts and flooding.

Called Chimney Meadows, this 50-hectare area forming part of a 250-hectare nature reserve, just upstream of Oxford, is of national importance for its species-rich wetland meadows that support large numbers of scarce ground-nesting birds, and provides a haven for curlew, snipe and reed bunting. And alongside the benefits to the flora and fauna, the restoration project was also completed with people in mind. Public access is provided through a network of pathways and there is also a new bird hide and viewing location in the centre of the reserve for enjoying the landscape and wildlife more closely.

Owner of the site Berkshire, Buckinghamshire & Oxfordshire Wildlife Trust (BBOWT) has been leading on the £2 million project. Atkins (member of the SNC-Lavalin group) has been working with BBOWT for a number of years, advising on a range of projects and volunteering on sites close to its offices. This latest work has included supporting on project development, data collection and funding applications to help make the project a reality.

The connection between the river and the floodplain created the framework for the project. Once that principle was agreed, the next step was to consider how best to design a connection to provide passage for fish.

Shifford Weir, a large structure on this navigable section of the Thames, was one of the last barriers to fish movement. Opening up a passage around the weir has delivered a vital solution in terms of fisheries, including potentially good spawning habitat rare in this part of the Thames, to improve the overall ecological condition of the river.

Turning challenges into opportunity

The construction of the new channel had to minimise the impact on the environment and all the different water users locally. Atkins collaborated with the Environment Agency, which manages the water in this area, to co-design the scheme. The 450-metre long, nature-based fish pass, designed by an interdisciplinary team of Atkins scientists and engineers, provides fish passage around one the last barriers on this part of the Thames opening up a 30km stretch of the Thames for the first time in more than a century. Along with fish, the channel is already also attracting birds and mammals.

The work involved cutting into some old embankments and fitting a new

structure into the existing banks of the River Thames. A spoil-management strategy ensured that excavation materials were redistributed around the site to avoid further flood risk and to keep the cost and carbon footprint of the excavation as low as possible.

As the project starts to mature, the BBOWT has started working in partnership with Bangor University and the Environment Agency undertaking research to demonstrate that active floodplains can also store carbon and contribute to averting the climate crisis.

David Gasca Tucker, Associate Hydrologist: 'These types of sensitive locations demand solutions that are creative and bespoke. The fish passage is long and complicated and requires complex engineering. However, it creates more habitat within the nature reserve itself. Before the project there was little flowing water habitat within the reserve, and what was there was seasonal, slow moving and restricted to the edges of the reserve. After completion we can see a more naturally functioning, diverse and resilient floodplain habitat.'



Transport for Wales

SNC LAVALIN - COP15 BULLETIN - INTERVIEWEE

ALANA SMITH, SUSTAINABLE DEVELOPMENT STRATEGY MANAGER

Can you describe your hopes and aspirations for COP15?

It is now critical that countries commit to ambitious goals to halt the decline of biodiversity we're experiencing around the world. With the recent news about the shortcomings of the world's climate-change pledges, biodiversity is at greater risk than ever. The health of plant and animal species directly impacts our communities which are also a part of nature and reliant on the ecosystem services they provide directly and indirectly, just as they are affected by our activities. It is the responsibility of our leaders to not just acknowledge this but, more importantly, to work together to protect and enhance biodiversity, especially in the face of the threats of future climate change.

How is your business responding to biodiversity challenges?

Transport for Wales (TfW)'s biodiversity action plan (BAP) forms part of an integral part of a framework to protect and enhance biodiversity while delivering a better, more integrated, and more sustainable transport network. Our work on biodiversity is strongly linked to the priorities set out in our Sustainable Development Plan. Through recognition of the intrinsic links between resilience

and the nature crisis, TfW's strategic Climate Adaptation and Resilience Plan is centred around the co-benefits that can be realised if climate adaptation is delivered effectively. Restoration of natural spaces and biodiversity is critical to society's adaptation to climate change; symbiotically reversing nature losses while also responding to a changing climate.

As such, Nature-Based Solutions (NbS) will be considered as a priority over hard-engineering options, to maximise opportunities for working with nature to reduce TfW's exposure to climate risks. NbS schemes will be evaluated in terms of their suitability for our assets and delivered collaboratively with core stakeholders, such as Natural Resources Wales, to ensure effective implementation. If hard-engineering solutions are evaluated as the most appropriate, we will endeavour to ensure that they are executed sensitively to minimise any negative impacts on surrounding habitats and/or species.

Do you have a project example you would like to share?

In December 2020, TfW was awarded a National Lottery Heritage Fund Grant of £100,000 for a 'Green Routes' project via the Welsh Government's Local

Places for Nature Scheme. This was the largest fund awarded in the scheme and a first for TfW. The fund targeted areas of high deprivation, providing access to nature on 'your doorstep'.

The goal of Green Routes, due for completion December 2022, has been to deliver biodiversity enhancements and green features such as planters and wildlife boxes at 25 railway stations across Wales and at five community areas close to stations. The project has been led by TfW's Sustainable Development Team with collaborative delivery support from the Community Rail and Community Engagement Teams. It delivers on our Sustainable Development Plan commitments, Biodiversity Action Plan, Community Rail objectives and Welsh Government Action Plans and targets.

The project has seen over 1,000 square metres of green space acquired for nature. It has strategically supported pollinators and nature connectedness with an emphasis on planting native and pollinator-attracting species.



Helping a community oasis thrive



SNC LAVALIN - COP15 BULLETIN - CASE STUDY

CAMLEY STREET. LOCATION: LONDON UK

London Wildlife Trust (LWT) has secured over £1million in funding based on Atkins' (member of the SNC-Lavalin Group) work on Camley Street Natural Park. The work was also used as evidence for LWT's campaign to improve protection of locally designated wildlife sites in London.

The journey began when LWT commissioned Atkins to produce a natural capital study, 'Ecosystem Services Valuation of Camley Street Natural Park'. This was done at no cost to the trust, as along with a financial contribution from Atkins' innovation fund, Atkins colleagues used their company volunteering allowance to undertake the work.

The result was a report demonstrating an annual contribution of £2.8 million per annum to the local economy and wider society; an impressive sum of

money for this small urban reserve.

One of the first studies to assess the 'price' of urban ecosystem services, it won praise in particular for exploring valuation of cultural services. Until then, economic appraisal of urban wildlife sites was often substantially undervalued and excluded as 'too difficult'.

The report, and the summary Atkins created for it as an 'investment portfolio', were presented to LWT on the 30th anniversary of the reserve and was used as supporting evidence to gain more than £1million in funding. The money is being used to finance a new visitor centre, opened in May 2022, and other works to future-proof this exceptional reserve.

Shared freely online and promoted through talks and an In Practice article, the report is opening new frontiers

in assessing ecosystem services; contributing to industry good practice; and demonstrating how innovation can help a community oasis thrive.

"Atkins' ecosystem valuation study has enabled London Wildlife Trust to demonstrate the economic value of a unique urban nature reserve to our funders, supporters and policy makers. The innovation of the ecosystems valuation approach has enabled London Wildlife Trust to take the first steps in securing Camley Street's future; the study is a key piece of evidence for a large capital fundraising strategy to construct new visitor facilities at the park, ensuring the park's longevity and creating a more sustainable King's Cross through the ecological and social benefits it brings.

Being able to strongly demonstrate the economic role that Camley Street Natural Park plays in the environs of King's Cross through such an innovative approach and in terms better understood by decision makers, will enable London Wildlife Trust to robustly advocate for the importance of urban biodiversity and the need to conserve wild green spaces for future generations."

Mathew Frith, Director of Conservation, London Wildlife Trust



Value, legacy and creating better outcomes

SNC LAVALIN - COP15 BULLETIN

MIKE MCNICHOLAS PIECE ON CREATING THRIVING PLACES

Think of nature as an asset says Mike McNicholas, Managing Director, Infrastructure, Atkins, a member of SNC-Lavalin Group.

When it comes to creating better outcomes, environment is key, even when it comes to meetings, according to Atkins' Infrastructure Managing Director Mike McNicholas.

'One of the best board meetings we've ever held was three or four years ago,' he explains. 'It was a warm, sunny day, so we decided to shift to a café in the park. We sat there for hours enjoying being outside, eating lunch and having lively discussions. It was an extremely productive meeting. Even in this small way, changing the environment changed the result.'

Applying a similar focus on environment in infrastructure projects, Mike believes that nature and health must be prioritised in planning discussions. 'Getting stakeholders engaged early in any infrastructure project where nature and health are included in the debate makes for a better start and more sustainable outcomes. And stakeholders include not just clients and users, but everyone impacted too. The ultimate is to deliver a biodiversity gain because it creates better outcomes and health.'

It's part of a major change in the approach and delivery of infrastructure projects. 'A generation ago, projects were created on the "predict and provide" model, and key considerations were about cost, rate of return and making things last longer,' says Mike. 'We're now talking about different sorts of value, such as social value and biodiversity net gain, and where the best value is in the combination of health, wellbeing and sustainability.'

Incorporating these values, the goldmark standard for a large-scale regeneration project that has created a thriving place is the London Olympic Park where Mike was project director for Atkins' work.

'From the start we were concerned about the legacy of the park and how to use the sporting event as a catalyst for the development that followed. A decade on, it has become the place we'd all hoped for, and it even delivered the extra bonus of boosting national pride.'

Mike McNicholas Managing Director, Infrastructure, Atkins, a member of SNC-Lavalin Group



SNC Lavalin's services'

We have a leading presence across Canada, the US and the UK, as well as targeted operations in Europe, the Middle East, Asia-Pacific and Latin America. Our primary focus is on the built and natural environments across seven markets:



MOBILITY:

- Rail and Transit
- Roads and Bridges
- Aviation & Ports
- Active Travel and Net Zero mobility



DEFENCE:

- Aerospace
- Defence
- Security



WATER:

- Water utilities
- Industrial water users
- Water resource management
- Nature-based solutions



NUCLEAR:

- Waste management and decommissioning
- Reactor support
- New build



INDUSTRIAL AND MINING:

- Pharma
- Agri-food
- Data centres
- Industrial
- Life sciences
- Mining and metallurgy
- Nature Positive Commitments



BUILDINGS AND PLACES:

- Thriving Places for nature and people
- Net Zero affordable homes
- Climate Smart Cities
- Commercial and residential
- Engineering a nature positive future
- Biodiversity net gain and natural capital advisory



POWER AND RENEWABLES:

- Transmission and distribution
- Energy
- Storage
- Hydropower
- Renewable energy

Nature-related services:

We bring together people, expertise and tomorrow's technologies to tackle today's challenges and become resilient to the challenges of the future. Our digital capability can be seen in our bespoke Working With Nature digital toolkit, which we implement on schemes to add and maximise value. By working alongside nature we can help clients achieve outcomes that achieve multiple benefits:



NATURE POSITIVE:

We are passionate about the promotion and implementation of nature-positive projects. Our leading technical experts include those who have created and authored gold-standard industry guidance, including a co-author of national best-practice principles for biodiversity net gain. We provide a range of other ecological services, ensuring that the schemes we work on protect and enhance species and habitats, leading to protecting and enhancing our natural capital.



CLIMATE POSITIVE:

We work collaboratively across specialist teams and disciplines, working with nature by restoring and creating habitats that enhance biodiversity while providing nature-based carbon removal, climate-change adaptation, mitigation and resilience services, and promoting the use of lower-carbon approaches to engineering challenges. Nature is our greatest ally in fighting and adapting to climate change. As a business, SNC-Lavalin is committed to achieving net-zero emissions by 2030 and is passionate about helping clients with their own net-zero goals.



WATER POSITIVE:

Our leading hydrological experts work with nature by incorporating nature-based solutions into flood-risk management schemes, including through ground-breaking river restoration. We are natural flood management pioneers, starting with digital tools to identify opportunities across catchments to designing and monitoring results on the ground. We also work with nature to deliver improved water quality, for example through the use of sustainable drainage systems (SuDS) and wetland creation.



PEOPLE POSITIVE:

We help clients to ensure that their schemes deliver maximum social value by working with nature and stakeholders, including ensuring schemes enhance biodiversity in a way that improves and promotes the wellbeing and health of local communities. Stakeholder and community engagement is at the heart of what we do and our goal is to deliver projects that create thriving places for people and nature by enhancing our collective social and human capital.





Our pioneering expertise on nature inspires our clients to realise broader benefits

UK - Claire Wansbury (claire.wansbury@atkinsglobal.com)

USA - Matt Cusack (matt.cusack@atkinsglobal.com)

Canada - Karola Toth (karola.toth@snclgroup.com)

Latin America - Francesca Montero (francesca.montero@snclgroup.com)

Ireland - Dr. Paul O'Donoghue (paul.ODonoghue@atkinsglobal.com)



atkinsglobal.com
snclavalin.com