

nature-based urban innovation

NATURVATION

— project —

URBAN NATURE-BASED SOLUTIONS AND THE COVID-19 PANDEMIC: PERSPECTIVES, LESSONS AND OPPORTUNITIES FROM NEWCASTLE-UPON-TYNE, UK

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Led by Durham University, NATURVATION involves 14 institutions across Europe working in fields as diverse as urban development, innovation studies, geography, ecology, environmental assessment and economics. Our partnership includes city governments, non-governmental organisations and business. We will assess what nature-based solutions can achieve in cities, examine how innovation is taking place, and work with communities and stakeholders to develop the knowledge and tools required to realise the potential of nature-based solutions for meeting urban sustainability goals.

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EXECUTIVE SUMMARY

This report promotes and develops the idea of urban nature-based solutions as a new policy agenda that can both serve to support the kinds of access to, appreciation of, and enhanced well-being from nature that has been brought into the spotlight by the COVID-19 pandemic. At the same time, the pandemic has raised new attention to who gets to access nature-based solutions and how in terms of existing inequalities and their exacerbation through social and economic hardship. This report looks at how nature-based solutions have been affected by the pandemic and have come to be used through the pandemic in cities across Europe with a specific focus on the city of Newcastle-upon-Tyne.

KEY MESSAGES

- Nature-based solutions with more and/or **diverse actors involved in their ongoing operation** had **more resilience** than those that were part of single institutions;
- We have realised the **power of everyday, nature spectacles** and that short, daily interactions with nature are beneficial to health and well-being and the depth of engagement with nature (being able to notice changes over time) is important;
- There were **new pressures on nature** due to the pandemic such as nature being consumed as a commodity, increased disturbance and damage to nature, increase in nature related incidents and there were tensions around nature and public/private space;
- **Social opportunities for nature** include changes in attitudes and behaviour providing the opportunity to build on the new appreciation of nature and ensure that we do not return to pre-COVID behaviours; Action for nature increased e.g. schools developing outdoor areas and more interested in forest school interventions to support mental health in children
- **Ecological opportunities for nature** include the benefits from less disturbance and cleaner air for wildlife (animal and plants); hope for more tolerance and appreciation of 'wild spaces' and that some urban areas can be left rather than being manicured and increased awareness of 'nature on your doorstep' and the idea of 15 minute neighbourhoods;

- **Connectivity** is seen through the lens of ecological issues for example, connecting ecosystems, green corridors etc. and whilst this is very important we have also found that social connectivity is important too. The pandemic highlighted both – ecological connectivity in terms of the importance of everyday forms of nature in your neighbourhood or ‘on your doorstep’ and social connectivity in terms of social connections and the disparities of experiences of each i.e. the pandemic exposed social and ecological inequalities related to nature in the city;

There are **three key opportunities** for a Green Recovery in a post-COVID landscape:
1) funding, policy and regulation; 2) economic and 3) health and well-being.

CONTENTS

1. INTRODUCTION	7
2. URBAN GREEN SPACE AND THE PANDEMIC: PERSPECTIVES FROM EUROPE	9
3. URBAN NATURE AND THE PANDEMIC IN NEWCASTLE	11
3.1 Urban Nature-Based Solutions in Newcastle: shifts in the public provision of parks	11
3.2 How urban nature was affected during the pandemic	12
3.3 'The lights been shone on nature': a summary of emerging pressures and opportunities for urban nature and nature-based solutions	19
4 KEY FINDINGS FOR A GREEN RECOVERY IN A POST-COVID-19 LANDSCAPE	21
4.1 Funding, policy and regulation opportunities for nature nature-based solutions	21
4.2 Economic opportunities for nature nature-based solutions	22
4.3 Health and Well-being Opportunities for Nature/Nature-based solutions	23
5. RECOMMENDATIONS FOR THE FUTURE	27
References	28
Appendix 1: The survey / interview questions	29
Appendix 2: Summary of the 103 nature-based solutions cases with COVID-19 responses found in the UNA database	30
BOXES	
3.2 The 15 minute neighbourhood or village	18
4.1 The North East Community Forest	22
4.2 Enhancing existing nature: the example of the Biodiversity project in Woolsington	23
4.3 Creating new green spaces: the example of a Linear Urban Park in Newcastle	24
4.4 Green Social Prescribing: an example of plans in Newcastle from the Woolsington Biodiversity project	26
LIST OF FIGURES	
1.1 Newcastle-upon-Tyne Map	8
3.1 Visual depictions of 'important' nature	12
4.1 Economic opportunities for urban nature in a post-Covid landscape	23
4.2 Health and well-being opportunities for urban nature in a post-Covid landscape	25
LIST OF TABLES	
2.1 Summary of COVID responses from the 103 NBS cases	10
3.1 Quotes about 'important' nature during the pandemic	13
3.2 Quotes about how access to nature was affected	15
3.3 Quotes about the new pressures on urban nature	16
3.4 Quotes on opportunities for nature	18
3.5 A summary of new pressures on urban nature and the new ways nature was used	19
3.6 Summary of the social and ecological opportunities for nature	19



1. INTRODUCTION

The pandemic lockdown has brought both the role and the lack of good quality green space to the fore, as many people discovered local green spaces and parks for the first time or made more frequent use of them. The closure of some parks to avoid overcrowding compounded pressures on people's sense of well-being and ability to cope, further highlighting deficiencies in green space provision and access. Communities Secretary Robert Jenrick was prompted to declare: "While the virus does not discriminate, we know that the lockdown is much harder for people who don't have a lot of living space, a garden, or anywhere for their children to run around. People need parks. (Friends of the Earth, 2020: 8)

Since the outbreak of COVID-19 in early 2020 the resultant pandemic has been depicted and experienced as an unprecedented global shock event caused by the human abuse of nature and creating chaos leaving no nation untouched (Mitchell and Phillips, 2021; Phillips et al. 2021). Examining past pandemics however, reveals that the impact of COVID-19 on the environment is not a novel event and many other pandemics have brought about an 'anthropause' in other words, a pause or halting of human movements and activities which impacts on nature (in all its forms) (Hymas et al. 2021; LePan, 2020). The COVID-19 quietus has allowed biologists, ecologists and conservationists to research the effects of human activity on wildlife and conservation (Corlett et al. 2020; Montgomery et al. 2020; Rutz et al. 2020). For example, a study of 126,000 birds in urban areas of North East Spain during lockdown found that urban birds have high behavioural plasticity to respond to rapid and novel environmental conditions such as COVID-19 (Gordo et al. 2021). Their population numbers did not increase (probably because the lockdowns were quite short and did not allow for colonization) instead the birds became more detectable in the early morning which Gordo et al (2021) argue, shows how they can rapidly adapt their daily routines. Furthermore, the huge reduction in ambient noise from traffic and aircraft meant that birdsong was heard more often and crucially that air pollution in urban areas was quite drastically reduced (Venter et al. 2020).

Connected to the ecological and environmental impacts are the social impacts of the pandemic as home working, home schooling and social distancing became the norm with exercise highly regulated and restricted by national governments during lockdowns, in some countries to one hour per day. This meant that 'nearby nature' if you had it, such as urban parks, woodlands and forests were accessed for daily exercise – reinforcing long-standing arguments that nature is important for physical and mental health and indeed, echoing ideas behind the urban parks movement of the 19 Century in Western Europe and North America whereby public health and nature were connected (Soga et al. 2020; World Health Organisation, 2016). Having to stay local for daily exercise has led to a re-imagination of 'adventure' in the age of COVID-19 with Mackenzie and

Goodnow (2020) calling for us to embrace micro-adventures and localism in the post-pandemic world rather than returning to the adventure travel¹ (e.g. to remote areas and usually quite risky) of pre-COVID times.

Whilst we have experienced more silent, less polluted towns and cities during the pandemic and there has been a widely reported 'new appreciation of nature' as we ventured out to our local green and open spaces for exercise, we must be clear that not all have experienced the pandemic in the same way. For example, it has been an uneven experience for those with confined mobilities (e.g. shielding), caring responsibilities and vulnerable health. For those having to combine home schooling, working at home and restricted exercise (to one hour) time poverty has been an issue.

In this report we promote and develop the idea of urban nature-based solutions as a new policy agenda that can both serve to support the kinds of access to, appreciation of, and enhanced well-being from nature that has been bought into the spotlight by the pandemic. At the same time, the pandemic has raised new attention to who gets to access nature-based solutions and how in terms of existing inequalities and their exacerbation through social and economic hardship. This report looks at how nature-based solutions have been affected by the pandemic and have come to be used through the pandemic in cities across Europe with a specific focus on the city of Newcastle-upon-Tyne (Figure 1.1).

As one of six Urban Regional Innovation Partnerships (URIPs) involved in the NATURVATION project between (2018 – 2021) Newcastle provided an ideal opportunity to build on existing knowledge and networks to conduct a rapid assessment of how the pandemic has shaped the challenges and opportunities facing urban nature-based solutions. The research was undertaken in March and April 2021 – at a distance/online – and involved a short survey (see Appendix 1) circulated to Newcastle URIP contacts and other groups/organisations in the city that use nature in different ways (e.g. running, walking, cycling, National Trust, community gardens etc) and then 'snowballed' if those people suggested others to contact. The survey email offered the opportunity for a short interview. In total, five people participated in an interview and there were an additional seven survey responses. Alongside speaking to people from Newcastle we also drew on the Urban Nature Atlas (UNA) to gather information about experiences of the pandemic in Europe. The UNA was developed by NATURVATION colleagues and has more than 1,000 examples from 100 European cities (including the UK) (see also Kiss et al. 2019 for the NATURVATION report on international comparisons using 54 cases). Our search specifically looked for two themes: 1) access to green space and 2) responses to the COVID-19 question – what happened to the nature-based solutions or urban green space during the COVID-19 pandemic? - and it revealed 103 case examples (see Section 2 for more and Appendix 2 for a summary of the 103 cases). An analysis academic papers, websites, social media, online media and other grey literature also informed the report.

The report is organised as follows: first, we examine the European perspective drawing on findings from the UNA database; second, we provide an overview of the Newcastle experience according to the survey and interviews; third, we highlight the key findings before ending with recommendations for the future.



Figure 1.1 Newcastle-upon-Tyne map

¹ Before the pandemic, adventure travel was experiencing significant global growth – growing by 195% between 2010 and 2014 (MacKenzie and Goodnow, 2020: 2).



Due to the COVID-19 pandemic, numerous interventions to curb its spread have been implemented in countries across the world such as social distancing measures and ‘lockdowns’ which have variously involved stay-at-home orders, curfews, quarantines etc. At the time of writing, many countries in Europe (and elsewhere) are on their third period of lockdown (e.g. UK, Belgium, France, Italy) – the first been between March and May 2020, the second about October to December 2020 and the most recent varying between January and April 2021. Whilst such measures are not new, there is widespread agreement that the scale of societal restrictions in response to the pandemic is unprecedented and, of particular relevance for this report, that it has revealed the critical role that urban nature plays in offering resilience for health and well-being (Samuelson et al. 2020). Central to realising the benefits of urban nature is access to it but as reported in literature, on the one hand, the use of green space such as parks has increased during the pandemic (Geng et al. 2021; Venter et al. 2020) but on the other, inequalities of access have been further exposed whereby there is a lack of green space in some towns and cities, particularly in disadvantaged neighbourhoods (Haase et al., 2017; Kleinschroth and Kowarik, 2020). Relatedly, a number of European city governments have seized the opportunity of the pauses caused by lockdowns to introduce new (some describe as drastic) measures. For example, Barcelona is planning to create 21 new public squares, along with all-new pedestrianised ‘green zones’; Milan has widened pavements and brought in strict speed limits and built miles of new bike lanes in its historic centre and Paris turned 40 miles of road into bike lanes – dubbed ‘corona pistes’ (‘corona lanes’) during the first lockdown and there are existing plans (devised before the pandemic) to plant four new urban forests close to major landmarks and new parks associated with the city hosting the 2024 Olympics (Oliver, 2021).

More broadly, a statement by the International Union for Conservation of Nature (IUCN) on the pandemic warns that it poses a challenge to momentum gained on nature, climate action and positive development such as the EU Green Deal because a number of landmark initiatives were postponed e.g. EU Biodiversity Strategy and the development of the global post-2020 biodiversity framework. As they ward, the current crisis is an important moment to reflect on the current paradigms and step up efforts to deal with the existential environmental challenges we face. Therefore, they welcome the call from European Ministers, as well as the broader coalition of decision makers, led by members of the European Parliament to keep the EU Green Deal and the accompanying investments as a top priority to build a more resilient Europe. As Luc Bas, IUCN European Director, noted:

If we want a more resilient post-COVID-19 Europe we will need to scale up investment in Nature-Based Solutions, for which we need a strong accounting of our natural capital at EU level.

A key factor for achieving a more resilient Europe then is investment in nature-based solutions and our interest in this section of the report is to examine what happened to existing nature-based solutions during the pandemic with a particular focus on how access was affected. As mentioned in the introduction, we found 103 nature-based solution case examples in the UNA database (see Appendix 2 for a summary) and Table 2.1 provides a summary of the different responses to the pandemic.

As we see in Table 2.1, we found eight different type of COVID-19 response. The most frequent response (31/103) was where the nature-based solutions remained open but with COVID-19 measures in place such as social distancing, hand washing and wearing masks. The second most frequent responses were: closing for a short period then re-opening with COVID-19 measures in place (14/103); cancelling or postponing a specific event that was planned (14/103); closing the nature-based solution (13/103); remaining open and not really affected by COVID-19 (10/103) or the nature-based solution project finished before COVID-19 so was not applicable (13/103).

The fewest responses were suspending some activities but others remained open e.g. play equipment closes in a park that remained open (3/103) or that access was restricted to authorised people only such as staff rather than visitors (3/103).

Overall, we found that nature-based solutions which had more/diverse actors involved in their ongoing operation had more resilience than those that were part of single institutions for example, nature-based solutions with staff and volunteers were more likely to remain open or re-open after national lockdowns with modified arrangement for public safety and hygiene. Community gardens and some museums (depending on the country) closed during the pandemic whereas others (with volunteers) closed then re-opened. Some nature-based solutions that were part of large institutions (e.g. universities, hospitals) such as green roofs, walls or gardens were inaccessible because of wider restrictions put in place e.g. in hospitals only staff allowed access and no visitors. We found that the types of nature-based solutions that were not affected by the pandemic were major structural projects e.g. that involved roads or the major ports.

Table 2.1 Summary of COVID-19 responses of the 103 nature-based solution cases

Type of COVID-19 response	Number of NBS Cases
Closed then re-opened with COVID-19 measures	14
Remained open but with COVID-19 measures	31
Event cancelled or postponed	14
Closed	13
Open – not affected by COVID-19	10
Suspended some activities	3
Access restricted to authorised people only	3
Not applicable as project finished before COVID-19	13



While our analysis at the EU level provides an overview of how cities have been responding to the pandemic with nature-based solutions and in turn the pressures that this is creating, a more detailed account of specific cities enables us to examine the dynamics at work on the ground. For the case of Newcastle we first provide some context/background about the development of provision of nature through urban parks before moving on to consider how these forms of urban nature-based solutions were affected during the pandemic. Finally, we explore the opportunities that nature-based solutions offer for a green recovery in a post-COVID landscape.

3.1 URBAN NATURE-BASED SOLUTIONS IN NEWCASTLE: SHIFTS IN THE PUBLIC PROVISION OF PARKS

The city of Newcastle has 33 urban parks and 60 allotment sites that since April 2019 have been managed by Urban Green Newcastle², an independent charitable trust (see NATURVATION Newcastle Snapshot, 2018³). The parks and allotments remained open (with some restrictions and/or altered behaviour) during the pandemic and guidance on the Urban Green Newcastle website reminds people to maintain social distancing, wash their hands regularly. Playgrounds across the city remained open but with some equipment like swings removed to allow for social distancing and multi-use play areas, skateparks, tennis courts and basketball courts were closed. There was a request for dogs to be kept under control at all times and information about public toilet opening times and use (one in, one out).

Within the Newcastle City Council (NCC), pre-COVID policies and ambitions included:

1. Declaring a Climate Emergency in April 2019 to make Newcastle carbon neutral by 2030⁴;
2. Improving air quality⁵;
3. A new approach to waste⁶;

² [Home | Urban Green Newcastle](#)

³ https://naturvation.eu/sites/default/files/newcastle_snapshot.pdf

⁴ <https://www.newcastle.gov.uk/our-city/climate-change-newcastle>

⁵ <https://www.newcastle.gov.uk/our-city/transport-improvements/transport-and-air-quality/tackling-air-quality>

⁶ <https://www.newcastle.gov.uk/our-city/new-approach-waste>

4. Protecting wildlife and promoting biodiversity⁷;

5. City centre transformation⁸.

These policies and ambitions persisted and became more urgent due to the pandemic, especially the plans to transform the city centre:

This vision is a long-term ambition of the council and is important now more than ever as COVID-19 has exacerbated the need for this programme as we continue to be hit hard by the pandemic⁹.

The vision of a healthy, green city with outdoor spaces and activities has been strengthened by the pandemic and there are plans to pedestrianize and 'green' more parts of the city centre thus aligning with agendas to 'improve air quality and remove the need to commute.....[and] building on the idea of 15 minute neighbourhoods ' (Helen Hinds, Resilience Manager, Newcastle City Council). We will say more about 15 minute neighbourhoods in the section about opportunities.

3.2 HOW URBAN NATURE WAS AFFECTED DURING THE PANDEMIC

In planning an economic recovery to renew Newcastle that also takes the pandemic seriously we would argue that nature and nature-based solutions have an important part to play as evidenced in the responses from our participants. We found:



Figure 3.1 Visual depictions of "important" nature

⁷ <https://www.newcastle.gov.uk/services/planning-building-and-development/trees-wildlife-and-green-environment/wildlife-and>

⁸ <https://www.newcastle.gov.uk/our-city/city-centre-transformation>

⁹ <https://www.newcastle.gov.uk/our-city/city-centre-transformation/city-centre-transformation-why-now>

Table 3.1 Quotes about 'important' types of nature during the pandemic

Trees, clouds, birdsong and blossom have had heightened attention given to them. There is much more sharing of these elements of nature on social media (Beth, National Trust).

Open green & blue spaces that are easily accessible are the ideal. Biodiversity is very important, close to nature. Birds, invertebrates, amphibians, insects and mammals. Wildflowers and 'wild spaces'. Areas which are suited for Birding and hearing bird song. Also the appreciation of trees and seasonality, and having the time to stop, look and listen. (John Littleton and Joanne Couchman, Woolsington Parish Council Biodiversity Project).

Local parks have been particularly busy as part of daily exercise, almost to the point where personally I've only gone very early in the morning (Paddy Freemans/Jesmond Dene/Rising Sun are my locals) as they are too crowded. (Karen Dobson, Scotswood Natural Community Garden).

People definitely seem to have been noticing the wildlife associated with areas such as roadside verges and within their gardens more than they were before. I think that it has changed peoples perspective on the 'wild spaces' within towns and cities which previously were seen as messy and places that required tidying up which are now more appreciated for the value that they can bring for wildlife and personal well-being. (Natalie Rutter, Ecology Officer, Newcastle City Council).

Green spaces, such as parks and nature reserves, in Newcastle have seen a huge increase in recreational pressure from humans and domestic pets as a result of the pandemic. (Rachel Locke, Save Newcastle Wildlife).

Certainly the Tyne Estuary has become really important to people, especially in the urban set up of Newcastle because it is their 'local water'. I know a lot of people flocked to the coast after lockdown one, or two wherever we are but I know a lot of people flocked to their local water body seeing that blue nature as really important but that goes hand-in-hand with the green nature and one of the observations is that they were using that area much more for exercise. (Rob Carr, Environment Agency).

In my social media bubble there are people who would never share those things [nature type posts] and they now are sharing and that's interesting. I think people are becoming more aware of those things...and its quite a subtle change, you know on Facebook and things. (Rob Carr, Environment Agency).

a) the types of nature that have become more important during the pandemic (see Figure 3.1 and Table 3.1); b) the ways in which access to nature has been affected; c) the new pressures on nature and on those managing urban nature and d) the opportunities for urban nature and nature-based solutions that have arisen due to the pandemic. We turn to each of these next.

3.2.1 The types of nature that have become more important during the pandemic

As Figure 3.1 and Table 3.1 demonstrate, the types of nature that became more important to people during the pandemic included green and blue space such as parks, nature reserves, local water bodies (e.g. the River Tyne and the Tyne Estuary). We found that it is not just a surface appreciation of nature for example its recreational possibilities but also **a new engagement with noticing nature in terms of its details, connections, diversity etc.** This means that during the pandemic **we saw nature shifting from being something to pass through/use to something to connect with in different ways.**

People also noticed that sharing photos of nature on social media platforms such as Facebook, Instagram and Twitter increased amongst those who would not usually share such pictures – demonstrating that there was a new appreciation of nature for some during the pandemic as daily life was restricted and controlled and kept local.

We found that there were **changes in how people look** at nature as described by a representative from the National Trust:

I think that possibly with the travel restrictions and the fact that for many months we were restricted to only an hour in nature a day we might look at nature now and see that you don't need an entire day/week/lifetime or lifestyle in nature to feel the benefits of it. It has become clear that you can spend just a short time in nature each day but the real benefit to your health and well-being comes from the way in which you interact with it – the depth in which you notice changes. We have realised the power of the 'common, everyday' nature spectacles. (Beth, National Trust).

CHANGES IN HOW WE LOOK AT NATURE

SHORT, DAILY INTERACTIONS WITH NATURE ARE BENEFICIAL TO HEALTH AND WELL-BEING

THE DEPTH OF ENGAGEMENT WITH NATURE IS IMPORTANT – NOTICING CHANGES

WE HAVE REALISED THE POWER OF THE COMMON, EVERYDAY NATURE SPECTACLES

3.2.2 How access to nature was affected

We also found that 'nearby nature' or 'nature on your doorstep' became more important for those lucky enough to live within walking or perhaps cycling distance of green and blue space (Table 3.2). Instead of travelling to nature in the car or on public transport more people ventured out in their locality for daily exercise especially when government guidance recommended only one hour of exercise per day.

Observations of others and reflecting on their own behaviour revealed a slower pace during these brief engagements with nature – one where people sat, looked and listened. They noticed the different types of nature mentioned in the previous section – the trees, blossom, bird song, clouds etc and there was an appreciation for what they saw locally and they wanted to share these experiences on social media. People also recognised that not only was a connection with nature important for exercise (physical health) it also improved their mental health – they felt better. Of course, this fits with research and also harks back to the conception of urban parks and the link between nature and public health but somehow over time the importance of this connection seems to have waned.

We also found that social and health inequalities were exacerbated by the pandemic in terms of access to urban nature particularly in deprived neighbourhoods due to a lack of close-by green space and/or perceptions of green space as unsafe.

3.2.3 New pressures on nature and on those managing urban nature

Our examination of the new pressures on urban nature and on those managing urban nature during the pandemic revealed several important findings (Tables 3.3 for key quotes).

As Table 3.3 demonstrates, urban nature faced new pressures during the pandemic in terms of:

Nature being consumed as a commodity: meaning that nature was being used by some citizens for health and well-being benefits rather than feeling connected or part of nature. The evidence for this observation is cited as the increase in litter/rubbish discarded in urban fringes i.e. not a 'pro-nature' behaviour.

Increased disturbance and damage to nature: here, increased footfall is cited as a problem in 'popular' urban nature and as research shows, trampling can have direct effects on plants e.g. breaking stems and the growing points of some plants, damaging the photosynthetic organs (leaves), damaging above-ground reproductive parts etc., or indirect effects such as soil compaction, with its associated effects (Field Studies Council, 2009).

Table 3.2: Quotes about how access to nature was affected during the pandemic

Accessing and valuing nature on your doorstep

I think there has been a shift away from people travelling to access nature towards a desire to have it on your 'doorstep'. The initial closure of public parks I believe is directly in correlation to many more people wanting to 'beautify' their residential street. (Beth, National Trust).

I think that people have started to place more value on the nature that is close to them, parks, gardens and areas of public open space, going out in nature has become less about taking a day trip out into the countryside and more about appreciating what is around them. (Natalie Rutter, Ecology Officer, Newcastle City Council).

...accessible open green and blue spaces within walking distance have become of much higher importance and value. These places now provide respite and a clear sense of 'ownership' is developing. As a consequence people have become far more aware of what these local places actually have to offer. People have developed an affinity towards them, developed an appreciation of biodiversity, and with good memories during difficult times. (John Littleton and Joanne Couchman, Woolsington Parish Council Biodiversity Project).

Accessing different types of urban nature for different reasons

It was more accessible in that they could do what they wanted to do in the time period that they had whereas if you went to one of the parks in Newcastle there were people there but there were people there just using nature as in sitting, looking at it, having a stroll and some still definitely exercising but there was much more of an exercise vibe at the quayside type. In the parks, people getting out for a bit of fresh air, appreciating the trees, the green nature more and it was more of a mental health type exercise. Whereas I did see the Quayside as more of a combined physical and mental health outdoor area (Rob Carr, Environment Agency).

Managing time to maintain access

We have not had Scotswood Garden open to the general public but have taken bookings for people to come and enjoy the space for an hour at a time -this has mainly been offered to people we already work with and we know are struggling with their mental health. People have commented on how valuable this has been for them, to have a safe space to be able to visit where they know it won't be crowded or feel unsafe. (Karen Dobson, Scotswood Natural Community Garden).

Access and social inequalities

There's about access to nature and the social inequality of how they use nature and how people of certain demographics will get out into nature and the more deprived areas because they haven't as much green space, and perhaps not so well informed and think they've become more insular, more indoors. And you've got that social inequality where the poor in society don't have the money to go to a gym or do those sorts of things whereas people who are more affluent do and because the gyms are closed they are going out to exercise and run. Whereas the lower demographic are a bit stuck and haven't got the impetus to do that. So there is that social inequality which leads to health and well-being inequalities. (Rob Carr, Environment Agency).

Increase in nature related incidents: the amount of people using nature increased during the pandemic and the observations suggest that many were either new or were not previously frequent users of urban nature. Again we see evidence of behaviours that are not pro-nature and in some cases could be described as 'anti-nature' behaviour e.g. increased incidence of fires and mis-use of natural spaces such as camping or fishing illegally. A lack of knowledge about how to interact in nature is cited as an explanation for some anti-nature behaviours for example, not being prepared for changes in weather.

Tensions around nature and public/private space: we also found that tensions arose between people living close to urban nature spaces and those visiting it during the pandemic, perhaps for the first time. In Newcastle (like elsewhere) some blue-green spaces became 'honeypots' with more frequent visitors, for example, the urban park called Jesmond Dene and the Quayside area on the River Tyne – a revitalised industrial area now a place of history, culture, business and residential offerings. This reveals how public/private tensions in nature can arise when private residents living close to public nature feel unsettled when such open, free spaces are used more frequently – giving rise to feelings very much like NIMBYism (Not-In-My-Back-Yard), a pejorative term coined in the 1980s to describe negative attitudes towards developments – though as we can see here, such feelings can also arise around urban nature when public/private boundaries are troubled.

Table 3.3: Quotes about the new pressures on urban nature during the pandemic

Nature being consumed as a commodity

I believe that the amount of rubbish that has been left in urban fringe areas of nature over the COVID-19 period has demonstrated that instead of truly connecting to nature during the pandemic and feeling part of the natural world, the majority of citizens have felt that nature is there to be consumed for its health and well-being benefits. It does not appear that the average person feels more inclined to act on behalf of nature or the environment and has not felt compelled to exhibit pro-nature behaviours. Instead, nature has been seen as a commodity during the pandemic. (Beth, National Trust).

Increased disturbance and damage to nature

...because of the Pandemic we have had significant increased foot-fall along the designated paths and tracks in these green & blue spaces. However on the other hand, there has been a vast reduction in road traffic which in turn is very beneficial for all forms of nature.

Some of the main negatives being an increase in dogs & dog walkers. Poo bags on grass and in trees, disturbance of wildlife, water birds in particular. The positives however are that these opportunities present a natural remedy for people needing fresh air, exercise, and mental well-being. Leading to increased mobility and better health.

(John Littleton and Joanne Couchman, Woolsington Parish Council Biodiversity Project)

I think there will have been more of an environmental impact in terms of increased footfall and the damage this will have caused as well as increased littering and disturbance of wildlife.

(Karen Dobson, Scotswood Natural Community Garden)

Increased disturbance as a result of more people using ever diminishing green spaces is having an adverse effect on wildlife

(Rachel Locke, Save Newcastle Wildlife)

Increase in nature related incidents

Local nature reserves and areas of public greenspace did see more pressure during the lockdown. We had reports of numerous incidents of fires within areas of woodland and within nature reserves and community groups that work within wildlife areas across the city reported increased levels of littering and damage to infrastructure such as fencing. There was definitely a rise in the number of people using these spaces, both as families, using them more frequently than usual – particularly when the exercise rule was in force but there seems to have also been an increase in incidents of anti-social behaviour – anecdotally usually blamed on teenagers/young adults.

(Natalie Rutter, Ecology Officer, Newcastle City Council)

Then in the summer there was increased incidents of fires because people were barbecuing. So there was misuse of spaces. A community rang mountain rescue because people had not returned to their car and they were found camping illegally. People were going out that were not used to interacting with nature and some behaviours were malicious and some was due to general ignorance. For example, in bad weather going out ill prepared.

(Helen Hinds, Resilience Manager, Newcastle City Council)

There's been an increase in actual reported incidents as well but some of that is linked to possible illegal fishing...so people had time to go out fishing but they didn't have licences.

(Rob Carr, Environment Agency)

Tensions around nature and public/private space

You saw tension playing out over the use of public spaces amongst people lived close to it with them becoming resentful about people visiting and using it. There were complaints from residents at Jesmond Dene and also the Quayside. When the students return in September/October you always get tensions but it was worse this year. Students were being demonised as spreading COVID-19 and there was a spike in September. Students became fearful of going out. There was conflict over the use of open spaces as they became more valuable and they became points of contention.

(Helen Hinds, Resilience Manager, Newcastle City Council)

Our research found a range of responses about the **pressures faced by those managing urban nature**. Rob Carr from the Environment Agency reported tensions between reduced capacities to deal with issues that arise due to furloughing of staff (e.g. of delivery partners) and an increase in nature related incidents due to the pandemic as some people have more time for recreational activities but do not realise or think they can get away with non-compliance of rules, regulations, legislation e.g. obtaining a fishing permit.

The Ecology Officer from Newcastle City Council noted that in early April/May 2020 there was an increase in complaints and a petition about grass cutting. Whilst grass cutting is usually an issue at that time of year, during the pandemic there was more public support “due to people having been out walking and seeing species such as bees and butterflies using the areas due for cutting”...[and] as an LPA ecologist the complaints were welcome and I feel that it gave us a bit of extra support in launching a project aimed at enhancing the biodiversity of roadside verges within the city (Natalie Rutter, Ecology Officer, Newcastle City Council).

Although the pandemic provided an opportunity for a re-evaluation of nature as valuable to communities, as the Resilience Manager from Newcastle City Council highlighted, “the wealthy parts of the city already valued open, green space. In poorer parts of the city like Byker they wanted hedges pruning because they said they hid drug dens – so then nature gets treated by public bodies as a problem rather than an asset” (Helen Hinds, Resilience Manager, Newcastle City Council).

The National Trust has an urban programme of greening up grey urban space that preceded the pandemic and a representative from them noted that although there was still pressure to move this agenda along, “COVID fostered more external support and advocacy for this programme. (Beth, National Trust).

Located in a deprived area of the West End of Newcastle, Scotswood Natural Community Garden¹⁰ is a charitable organisation that faced pressures on several fronts during the pandemic:

There have been several pressures on us, firstly during each lockdown we cancelled our volunteers, which meant the site was mostly unmanaged. As we are a wildlife site the impact was minimal but did add pressure to staff as we needed to still maintain paths and carry out health and safety audits to allow people on site. There has been a huge amount of need in our community. We are in a very deprived area and as such many people don't have gardens and safe spaces to use. So it has taken careful management to be able to timetable slots for families and individuals to access the site safely, whilst managing all of our other well-being support.

(Karen Dobson, Scotswood Natural Community Garden)

We see here that although impact on wildlife in the garden was minimal the key pressures for staff were related to maintenance, management and safety to ensure there was access for people without gardens or safe green spaces.

Another perspective came from a representative of the campaign group Save Newcastle Wildlife who reported that:

We have had members of the public get in touch and raise concerns about disturbance to wildlife e.g. skylarks on the Town Moor, increased littering, lack of management of nature reserves.

(Rachel Locke, Save Newcastle Wildlife).

3.2.4 Opportunities for urban nature

Opportunities for urban nature arising from the pandemic period as revealed by our research (see Table 3.4 for key quotes) can be categorised in two related ways:

Social opportunities for urban nature: our research reveals that there has been positive (and some negative) changes in attitudes and behaviour towards urban nature therefore, there is an opportunity to build on the new appreciation of nature by ensuring it stays at the top of decision-makers agendas. There is also evidence that action for nature has increased for example, schools developing outdoor areas and more interested in forest school interventions to support mental health in children.

¹⁰ <https://scotswoodgarden.org.uk/>

Ecological opportunities for nature: on the one hand, as discussed above, some urban nature spaces have become ‘honeypots’ and their popularity has given rise to tensions but on the other, there are reports that wildlife (animals and plants) have benefited from less disturbance and cleaner air. As Venter et al (2020) argue, the lockdowns caused global air pollution to decline and in an article about how the pandemic has affected wildlife in Italy several new observations and occurrences in unusual habitats, for example, wolves were seen closer to cities; some breeding birds did better with less disturbance by humans and dog walkers; there was less amphibian road mortality and rabbits which are usually nocturnal were becoming bolder during the day (Manenti et al. 2020). Furthermore, the Ecology Officer for Newcastle City Council expressed hope that there would be more tolerance and appreciation of ‘wild spaces’ and that some urban areas can be left rather than being manicured. Another significant opportunity is the increased awareness of ‘nature on your doorstep’ and the threats to it and the benefits of nature being close by which fits with the idea of the ‘15 minute neighbourhood or village’ (see Box 3.2).

Box 3.2: The 15 minute neighbourhood or village

Surveys show that in a post-pandemic landscape, roughly 40% of people wish to work from home 40% of the time which means redesigning the time/distance demands of existing cities towards a vision of living and working in a 15 minute neighbourhood or village. Based upon four pillars, proximity, diversity, density and ubiquity, 15-minute policies transform urban spaces into connected and self-sufficient (or ‘complete’) neighbourhoods. Cities like Milan, London, Paris, Barcelona have responded at speed to the pandemic by progressing or by making a public commitment to cycle lanes, nurturing ‘parklets’ (greening and pedestrianizing the cities) in underused areas of the city and designating streets for pedestrian use.

Sources: Lee-Williams, T. (2021) *Designing the Fifteen Minute City*, ARUP; Sutcliffe, T. (2020) Famous for 15 minutes? *Smart Transport*, 7: 9-13; Claris, S. (2021) *Making great strides: Learning from the revolution on Milan's post pandemic streets*, ARUP.

Table 3.4: Quotes on opportunities for urban nature

A positive for us has been the readiness of schools to develop their outdoor areas to be more wildlife friendly and more interested in using forest schools interventions to support the mental health of children. I've definitely seen people showing more interest in helping to care for local parks on local social media groups too. (Karen Dobson, Scotswood Natural Community Garden)

The pandemic has highlighted the importance of access to green space and nature and the need for more land to be set aside for nature. We have called on Newcastle City Council to manage 30% of land for nature by 2030, in line with Bristol Council's commitment, and to conduct a Newcastle Biodiversity Index. (Rachel Locke, Save Newcastle Wildlife)

The other opportunity that we've got is that there's a lot of research and evidence coming out now on the importance of nature – the lights been shone on nature – and its keeping that momentum going and we've really got to think about looking forward and across organisations because there are some they may be valued nature but it wasn't very high up the agenda. (Rob Carr, Environment Agency)

I hope that people have become more aware of the need for wild spaces and will more tolerant of urban areas becoming less manicured, this will hopefully allow us as council to consider more nature-based solutions in response to issues that arise and create an appetite for the active pursuit of these solutions to benefit biodiversity, climate change impacts and social well-being. The rise in awareness of the value of nature and solutions including nature also offer opportunities within development management to encourage green solutions into developments such as green/blue infrastructure, the use of biodiverse green roofs, green walls etc. (Natalie Rutter, Ecology Officer, Newcastle City Council)

3.3 'THE LIGHTS BEEN SHONE ON NATURE': A SUMMARY OF EMERGING PRESSURES AND OPPORTUNITIES FOR URBAN NATURE AND NATURE-BASED SOLUTIONS

As Rob Carr from the Environment Agency said succinctly about the impact of the pandemic on urban nature – 'the lights been shone on nature' – and as we have revealed in this report this means there are new pressures and uses for urban nature and opportunities. Therefore, to conclude this section we briefly summarise the key pressures, uses and opportunities for urban nature and nature-based solutions that our research has found (see Table 3.5 and 3.6) before identifying two new management approaches.

Table 3.5: A Summary of the New Pressures on Urban Nature and the New Ways Urban Nature was used

URBAN NATURE	
New Pressures	New uses
<ul style="list-style-type: none"> Nature seen as a commodity to be consumed for health and well-being benefits rather than acting on behalf of nature; Tensions in public green spaces between 'locals' and those there for exercise; Increased amount of rubbish, littering; Significant increase in footfall along designated pathways in green and blue spaces; Increase in dogs and dog walkers; Disturbance of wildlife; Increased incidence of fires; Increased damage to infrastructures such as fencing; Increase in anti-social behaviour. 	<ul style="list-style-type: none"> Increase in gardening and time spent at allotments. More people requesting allotments and now on waiting list; More people recognising the impact nature has on mental health and well-being; The opportunity to take a break from normal everyday life bringing about a new appreciation for nature; A disconnect between those living in urban environments who are familiar with nature engagements and those newly experiencing it during the pandemic e.g. inappropriately dressed or prepared; The growth of 'staycations'; A growth in geocaching as a way of making a walk more interesting for adults and children – the idea of micro-adventures in the locality.

Table 3.6: Summary of the social and ecological opportunities for nature

OPPORTUNITIES FOR NATURE	
Social	Ecological
<ul style="list-style-type: none"> Attitudes and behaviour changes; Opportunities to build on the new appreciation of nature and ensure that we do not return to pre-COVID behaviours; Action for nature increased – schools developing outdoor areas and more interested in forest school interventions to support mental health in children; Chance to explore the relationship between health and mental well-being and access to nature; Increased amount of research and evidence on the benefits of nature and nature-based solutions. 	<ul style="list-style-type: none"> Wildlife (animal and plants) have benefited from less disturbance and cleaner air; Hopefully more tolerance and appreciation of 'wild spaces' and that some urban areas can be left rather than being manicured; Nature on your doorstep – increased awareness of it, the threats to it and the benefits of nature being close by i.e. the idea of 1 minute neighbourhoods;


3.3.1 Creating new management approaches in the post-pandemic landscape

Fostering year-round interest in nature

The National Trust representative said that they will manage urban green spaces in the future by looking at how to foster year-round interest for example, blossom trees that also fruit and have rich autumn colour, more seasonal plants and flowers etc.

Benefits of a break from human activity and intervention

Karen Dobson from Scotswood Natural Community Garden said that they have talked about the garden itself and they can see where it has 'appreciated' the break from human activity and intervention therefore they aim to update the garden management plan taking the benefits of inactivity into account.



4. KEY FINDINGS FOR A GREEN RECOVERY IN A POST-COVID-19 LANDSCAPE

Global crises like the COVID-19 pandemic requires quick, decisive and coordinated action that spans across different levels of government and involves different agencies. Mass behaviour change was/is a necessity to overcome the pandemic and in the UK (and many other countries across the globe) there was a national lockdown (the first one) around March to May 2020. Existing connections (partnerships, networks, governance structures etc) were crucial to developing a coordinated response to the pandemic and in Newcastle it was decided at the start to build on existing networks to form the COVID-19 governance structure. An existing structure – the Well-being for Life Board - was reconfigured to form the City Futures Board and this is responsible for the economic recovery and was the key forum to bring together the council, business, universities, NHS, police, VCS and others in coordinating pandemic, health and well-being and recovery functions (NCC COVID Control Plan, 2021). The national government department for Health and Social Care guidance for local decision-makers includes a framework for how ‘national, regional and local partners should continue work with each other, the public, businesses, institutions (including schools, prisons, hospitals, care homes and homelessness settings) and other local system partners in their communities to prevent, manage and contain outbreaks of COVID-19’¹¹. In Newcastle, this guidance was translated into a COVID-19 Control Plan, initially published in the summer of 2020 and updated in March 2021. Alongside this, another significant national policy was announced in February 2021 – the roadmap out of the current crisis for England¹². In response, and at the time of writing, Newcastle in partnership with the NewcastleGateshead Initiative (NGI) were undergoing consultation (between March and May 2021) to gather insights on how best to recover, build new partnerships and identify projects and opportunities for collaboration¹³. The recovery for Newcastle involves a 10-year vision which aims to:

...set out how the city will support the well-being of their people and communities, drive innovation and create jobs, continue to transform the city centre and neighbourhoods, and invest in infrastructure to meet future needs. All underpinned by a commitment to net- zero and creating more inclusive and equal society¹⁴.

Further to the 10-year vision for Newcastle, our research identified three key opportunities for nature/nature-based solutions

¹¹ Source: [COVID-19 contain framework: a guide for local decision-makers - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/covid-19-contain-framework) [accessed April 2021]

¹² Source: [COVID-19 Response - Spring 2021 \(Roadmap\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/covid-19-response-spring-2021-roadmap) [accessed April 2021]

¹³ Source: [Our Newcastle recovery | Newcastle City Council](#) [accessed April 2021]

¹⁴ Source: [Our Newcastle recovery | Newcastle City Council](#) [accessed April 2021]

that will be critical for a green recovery in a post-COVID landscape: 1) Funding, policy and regulation opportunities; 2) economic opportunities and 3) health and well-being opportunities. Fundamental to all three of these opportunities (as well as when thinking about how nature is affected) is a consideration of connectivity.

Often, **connectivity** is seen through the lens of ecological issues for example, connecting ecosystems, green corridors etc and whilst this is very important we have also found that *social connectivity is important too*. The pandemic highlighted both – ecological connectivity in terms of the importance of everyday forms of nature in your neighbourhood or ‘on your doorstep’ and social connectivity in terms of social connections and the disparities of experiences of each i.e. the pandemic exposed social and ecological inequalities related to nature in the city.

We found that everyday forms of nature became increasingly noticed and valued e.g. local parks, common ground, gardens, trees, wild spaces and building on this new appreciation it would be much easier to engage with nature in the city if the streetscapes and pathways connected the different forms of nature. This emphasises the fact that green routeways and pathways through the city are as important as the grey routes.

4.1 FUNDING, POLICY AND REGULATION OPPORTUNITIES FOR NATURE NATURE-BASED SOLUTIONS

Rob Carr from the Environment Agency said that nature is becoming more integral at governmental levels (national to local) through funding, policy and regulation for example, the North East Community Forest (see Box 4.1); the Environment Bill¹⁵ (due to come through in the autumn of 2021, in time for the COP26 in November in Glasgow) and the Local Nature Recovery Strategies¹⁶ which every local authority will have to produce.

Box 4.1: The North East Community Forest

The emphasis has to be on local authorities to connect across boundaries because nature doesn't stop at their borders. (Rob Carr, Environment Agency).

There are ten existing Community Forests in England. In 2020, Newcastle City Council was invited to submit an expression of interest (EoI) to England Community Forests, to create a new Community Forest in North East England - a decision will be made in July 2021. Newcastle has combined with five other local authorities, locating the proposed North Est Community Forest in Newcastle, North and South Tyneside, Gateshead, Sunderland and Durham. 500 hectares of new woodland would be created with 39 hectares in Newcastle including street trees and new groups of trees on green space around the city. All community forests have a dedicated forest team (a Forest Manager and a Woodland Officer as a minimum) and have to produce a Forest Plan. The aim is also to link up with existing forests in the region and beyond i.e. the Great North Forest from 2008¹⁷ and to build wildlife corridors. At the moment there are a range of grants on offer for trees and woodlands. The expected outcomes include increased biodiversity, flood alleviation, forest products, culture and heritage, long-term carbon capture and improved water and air quality.

Furthermore, Newcastle City Council are submitting a bid to the Local Authority Treescape Fund (LATF) under the banner of the North East Community Forest (NECF). LATF will fund LA-led tree planting schemes aimed to improve landscape connectivity outside woodland, increase natural colonisation where appropriate and provide benefits to ecosystems and society, such as carbon absorption, flood protection and support for biodiversity. The LATF fund focuses on the urban forest, which will establish more trees in settings such as hedgerows, parklands, urban areas, beside riverbanks, roads (street trees), footpaths, in copses and shelterbelts.

Source: Interview with Lloyd Jones, Landscape Officer, Newcastle City Council

¹⁵ <https://deframedia.blog.gov.uk/2021/01/26/environment-bills-next-steps/>

¹⁶ <https://www.gov.uk/government/news/five-local-authorities-announced-to-trailblaze-englands-nature-recovery-pilots> [accessed May 2021]

4.2 ECONOMIC OPPORTUNITIES FOR NATURE NATURE-BASED SOLUTIONS

Our research found that there are two key economic opportunities for nature and/or nature-based solutions that would ensure that the new appreciation for nature maintains its place in plans for a green recovery (see Figure 4.1). First, there is an opportunity to **use and/or enhance nature that already exists in cities**. Understanding the various types of green and blue spaces (parks, gardens, allotments, riversides etc) and the ways in which they are not only appreciated by people but are valuable in terms of aligning with biodiversity, climate change, health and well-being agendas and as an economic asset in that nature attracts people and makes places more pleasant to live, work and/or play. An example of existing nature being enhanced is the Biodiversity Project in Woolsington (see Box 4.2)

Box 4.2: Enhancing Existing Nature: the example of the Biodiversity Project in Woolsington¹⁸

The Parish Ponds in Woolsington were developed in the 1990s following open cast working and have since matured and become a valuable green/blue space for many people as evidenced in a recent survey (2021) by the Parish Council. The Biodiversity Project started in 2019 with the aim of improving habitats for insects, bees and butterflies and in doing so enhance important green & blue spaces for residents and visitors alike. The first phase of the project was funded from the Community Infrastructure Levy and involved (following consultation with land owners, City Council Planning & Ecology sections, the Environment Agency and Northumbrian Water) that the invasive Water Soldier plant, which makes the water stagnant, was to be eradicated from the main pond by a specialist company. Removing the invasive plant would improve water quality of the pond and prevent further spreading; re-oxygenate the pond and therefore the quality of water going back into the Ouseburn River and downstream and deliver improvement to habitats and biodiversity therefore encouraging the return of breeding water birds, invertebrates and amphibians. Phases 2 – 4 of the project aim to work with partners in a multi-agency approach to improve river catchment by: enhancing biodiversity and conservation; increasing wildflower areas; reducing flooding risks and to explore prospects for increasing inlet/outlet capacity to/from Ouseburn; tackling effects of antisocial behaviour, litter, fires, damage to trees, motorbikes, etc; introducing better access for all and improve bridleways; improving pathways, lay some boardwalks and introduce some seating and a dipping platform.

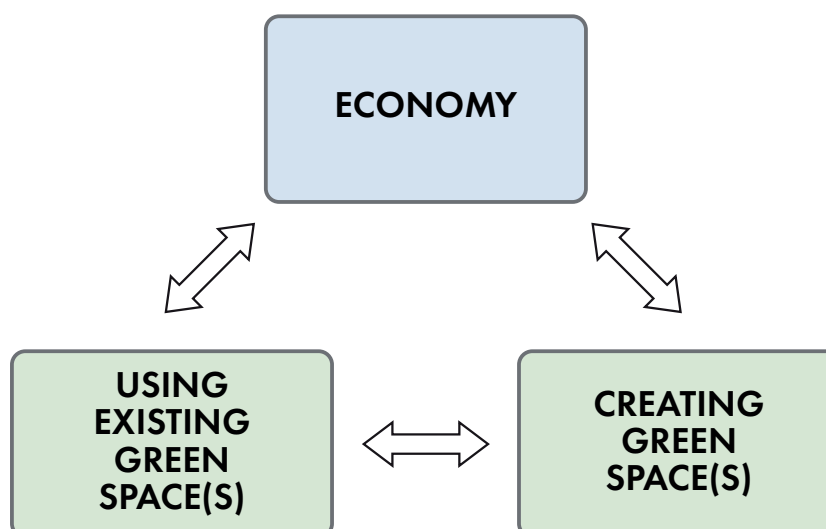


Figure 4.1: Economic opportunities for nature/nature-based solutions in a Post-COVID landscape

¹⁷ The Tees Forest had national government funding, then local government then Groundworks NE but they were liquidated however, the forest still exists.

¹⁸ Source: Documents shared with the report author by John Littleton and Joanne Couchman, Woolsington Parish Council Biodiversity Project. 2021]

Second, there is the economic opportunity to **create more green and blue space for publics**. Empty urban space (grey/green/open) is viewed as unproductive economically therefore, as part of a Green Recovery we can consider what to do with them to draw more people into urban spaces especially as the pandemic has taught us that we need more outside spaces for people to socialise safely in social bubbles and at a distance. Therefore, a connection with nature is important to support a recovery that covers both socialisation and social interaction. In Newcastle, we have an example of the way that green space and nature are becoming part of urban regeneration i.e. plans by Newcastle NE1 Ltd¹⁹ for an Linear Urban Park at the Quayside (see Box 4.3). Similar plans are afoot in other towns/cities such as Stockton-on-Tees in North East England who aim to demolish half the high street and instead create an urban park that will be linked to the riverside area²⁰.

Box 4.3: Creating New Green Spaces: the example of a Linear Urban Park in Newcastle²¹



The Quayside in Newcastle with its bridges is iconic and is described by NE1 as a 'golden thread'. Building on the success of *Seaside by the Quayside* which has been run in the summer season for a few years and inspired by the commercial gains of such an approach as witnessed in Copenhagen, Melbourne and New York's High Line - they now plan to create a permanent (rather than seasonal) 1km linear urban park. There will also be health benefits because pedestrian links with the rest of the city will be improved and it will enable greater use of the river for physical activities. In addition, on the Quay wall next to the urban park, NE1 are investing with the Environment Agency in a floating ecosystem which will be 50 to 75 square metres and 'basically anchored, going up and down with the tide so you get all the benefits of the root system and all the greenery on the top' (Rob Carr, Environment Agency). The creation of this new green space will make it more useable for people who live, work and play in Newcastle and increase footfall, dwell-time and spending for businesses as well as encouraging further businesses to locate there, thus, maximising the commercial benefits of the area over a longer period of time (day and night).

The economic opportunity for nature and nature-based solutions is that the new appreciation for nature brought on by the pandemic has alerted businesses to the importance of bringing a space for nature in but as many scholars have warned we must be aware of the tensions that can arise when economic priorities are prioritised over the social and ecological benefits for example, the New York High Line is frequently cited as an example of 'green gentrification' with Lang and Rothenberg (2017) describing it as a development project masquerading as a park.

¹⁹ Newcastle NE1 Ltd was established in 2009 and is a Business Improvement District (BID) company <https://www.newcastle-ne1.com/> [accessed May 2021].

²⁰ <https://www.bbc.com/news/uk-england-tees-56039292> [accessed May 2021].

²¹ Photo Credit: Newcastle NE1 Ltd (2019) New Plans, New Possibilities, New Opportunities Newcastle, NE1 Business Proposal, 2019 – 2024, page 34. <https://site-newcastle-ne1-ltd.s3.amazonaws.com/media/NE1%20Bid%20Renewal%20Document%20AW%20Spreads%20Low-Res.pdf> [accessed May 2021].

4.3 HEALTH AND WELL-BEING OPPORTUNITIES FOR NATURE/NATURE-BASED SOLUTIONS

Our research found that there are two key health and well-being opportunities for nature and NB nature-based solutions S (see Figure 4.2).

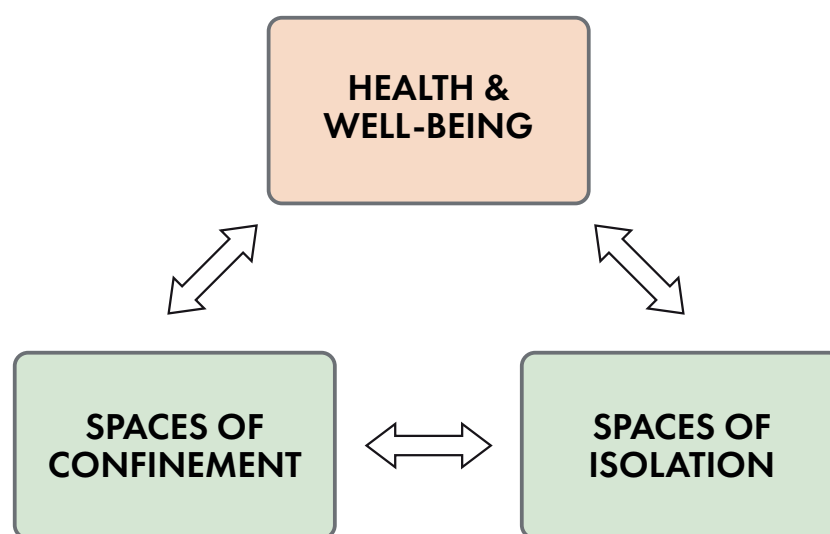


Figure 4.2: Health and well-being opportunities for nature/nature-based solutions in a post-COVID landscape

The first is about **nature and spaces of confinement** whereby during the pandemic especially during lockdowns, social interactions became confined to public spaces and access to private space was prohibited or restricted. As Armstrong et al (in progress) argue, configurations of the public always involves a consideration of the private and vice versa and they warn that controversies can emerge in the city from concerns over how to realise the ‘public’ good on the one hand, and the ways in which the public qualities of nature should be maintained on the other. The second, is about **nature and spaces of isolation** whereby nature/green/blue spaces are important and connected to recovery and mental health in particular for example, being yourself in nature; finding inner peace, sanctuary. There is a wealth of evidence on how the public’s health can be improved by increasing access to green and blue space and improving the quality of our natural environment. For example, evidence submitted by Public Health England and the Landscape Institute in 2016 to the Inquiry into Public Parks undertaken by the Select Committee on Communities and Local Government stated that people who live in urban areas that have more green and blue spaces have better mental health and such healthy places are restorative, uplifting, and healing for both physical and mental health conditions (Morton, 2016). Furthermore, in 2020, the UK Environment Minister announced seven sites that would share funding of 5.77 million to test the ways that connecting with nature can improve mental well-being, focusing on areas hardest hit by COVID-19 i.e. those living in deprived areas, people with mental health conditions or BAME communities²³. Central to this will be Green Social Prescribing as the Environment Minister Rebecca Pow stated:

As we build back better and greener from the pandemic, we are looking forward to working closely with these sites to deliver an enhanced green social prescribing offer which will deliver real benefits for individuals across the country.

The Green Social Prescribing programme aims to support patients to engage in nature-based activities. In Newcastle, there are plans to expand social prescribing efforts to include green social prescribing (see Box 4.4).

²² The seven sites (Humber Coast and Vale Health and Care Partnership, South Yorkshire and Bassetlaw Integrated Care System, Nottingham and Nottinghamshire Integrated Care System, Joined Up Care Derbyshire Sustainability and Transformation Partnership, Greater Manchester Health & Social Care Partnership, Surrey Heartlands Health and Care Partnership, Bristol, North Somerset and South Gloucestershire Sustainability and Transformation Partnership) will be managed by NHS England and NHS Improvement with support from Defra, Department of Health and Social Care, Natural England, Public Health England, Ministry of Housing, Communities and Local Government, NASP and Sport England.

²³ <https://www.gov.uk/government/news/new-sites-to-test-how-connecting-people-with-nature-can-improve-mental-health> [accessed May 2021] Care, Natural England, Public Health England, Ministry of Housing, Communities and Local Government, NASP and Sport England.

Box 4.4: Green Social Prescribing: an example of plans in Newcastle from the Woolsington Biodiversity Project

Action for Children, in partnership with New Writing North and Newcastle City Council Arts Development Team, are launching a community development project, Thriving Communities, to be run from a hub located at Gala Field in Newbiggin Hall. The project aims to increase the range of social prescribing opportunities available locally (for children, young people and adults) through an arts-based programme, physical sports and activities, environmental activities, advice and support. Social prescribing and community-based activities are underdeveloped in this location and this presents a good opportunity to enhance that process. One of the main deliverables of Social Prescribing is Green Prescribing, which utilises biodiversity and nature. Woolsington Parish Council is to support this scheme, working with the hub by linking it to its Biodiversity Project, in particular plans for the Upper Ouseburn & The Ponds. These areas are to be included in scope as areas for use in Social & Green Prescribing. In further support of the Green Social Prescribing agenda the Parish Council wishes to explore the possibility of a Newbiggin Hall Community Garden based on the very successful project running in Scotswood.



The pandemic has helped us reconsider the value of everyday nature in our local place(s) rather than thinking we have to travel to nature. Restricted mobility has made us look, contemplate and immerse ourselves in our local environments, perhaps seeing for the first time the natural beauty and wonder around us. As Mackenzie and Goodnow (2020: 5) argue, ‘if the pandemic has done nothing else of value, hopefully it has revealed what our own bioregion has to offer and illustrated that fulfilling adventures can be found much closer than we thought’. This therefore, is the time to ensure the prominent status of ‘nature’ is maintained by embedding it (in all its forms) into policy, practice and actions – making the connections, thinking creatively, innovating and drawing on good examples and best practice. The evidence is vast and overwhelming – that nature is good – ecologically, socially and economically but we must be mindful of the ethical considerations i.e. that nature is a public good but attempts to enrol it into private and some public initiatives can lead to injustices such as exacerbating inequalities and contestations around green gentrification. Restricted mobilities in historically disadvantaged neighbourhoods is often due to lack of green spaces and/ or such spaces being perceived as unsafe or even dangerous. Therefore, the Green Recovery in a post-COVID landscape should underline the need for greater investment and support for green spaces in disadvantaged neighbourhoods and guidance on how to ensure justice is considered in the design and implementation of nature-based solutions has been produced by NATURVATION (2019²⁴, 2021²⁵). The pandemic is an opportunity to rekindle those lessons and that knowledge and act for the future – ensuring that nearby nature is accessible for all.

²⁴ Taking Action for Urban Nature: Citizen Engagement Handbook, NATURVATION https://naturvation.eu/sites/default/files/result/files/citizen_engagement_handbook.pdf [accessed May 2021]

²⁵ Policy and Planning Tools for Urban Green Justice: Fighting displacement and gentrification and improving accessibility and inclusiveness to green amenities, NATURVATION <https://naturvation.eu/sites/default/files/result/files/toolkit-urban-green-justice.pdf> [accessed May 2021]

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APPENDIX 1: THE SURVEY/INTERVIEW QUESTIONS

1. Which places or kinds of nature in the city do you think have become important to people during COVID-19?
2. Were these places or forms of nature always important, or has their status changed?
3. Has COVID-19 brought new pressures on urban nature or revealed new things about how, and by who, urban nature is used?
4. What have been the pressures in your own work in managing nature in the city?
5. Are there opportunities for urban nature and nature-based solutions that have arisen due to the pandemic?
6. What might have changed in how we look at and/or manage nature in the future?

APPENDIX 2: SUMMARY OF THE 103 NATURE-BASED SOLUTIONS CASES WITH COVID-19 RESPONSES FOUND IN THE UNA DATABASE

Country	Number of NBS	Name/Type of NBS
Spain	24	<p>Tree Master Plan Urban Orchards Tracks Park Corridor Peri-Urban Natural Park Wall gardens and decorated patios Community Gardens (x 3) Urban Park (x 3) Great Route of Bilbao Regeneration of Alameda Main Road</p> <p>Banks of the Ebro River Parque del Agua Orchards Foresta Plan 2030 Educational Pathway at the Botanical Garden Vegetable barriers at the Port of Alicante Urban Trails Network of Alicante Walk among the old trees at the Passage of Canalejas Roof Top Garden Ecological and Social Orchards (x 3)</p>
U.K.	17	<p>Woodland Community Garden Anfield Regeneration Project Gravel Pits Nature Reserve Wildlife in the City Nursery Garden and Building Orchard creation/creating/restoring semi-natural habitats City Farm</p> <p>Sustainable Hospital Park Restoration Community Garden (x 2) Wetland Expansion Sedum roof for Nottingham Trent University Green Roof (x 3) Mill Leat Restoration, Bute Park</p>
France	17	<p>Community Gardens Per-Urban Park Green My City Family Gardens of Clermont Ferrand Montjuzet Park Planting flowers for bees Pedagogical farms in the city Transformation of abandoned land into neighborhood garden</p> <p>Family gardens of Montpellier Agriparc of Mas Nouguier Le Lez River Ephemeral Gardens of Place Stanislas Sainte Marie Park and Festival of Nature Botanical garden and its greenhouses renovation Joseph Sanguedolce Park-Museum The Shared Garden Of Sainte-Madeleine Place</p>
Germany	14	<p>Allotment Gardens "Herzkamp" lighthouse project Roof Garden Eco-pedagogical school garden Vegetable Yard Krupp Park (regeneration of former steel works) New lake creation and green banks</p> <p>Tree sponsorships by citizens University Park Essen Community garden Ronald McDonald House Essen in Grugapark Emscher Landscape Park programme Natural Baths Haunstetten Greening Hannover</p>
Norway	6	<p>Garden at the Botanical Garden of Oslo University Bjerkedalen Park and Reopening of the Hovin Rive Allotment Gardens</p> <p>Lovstien Nature Trail Nygaard Park Ostensjo Lake Environmental Park</p>
Belgium	4	<p>Blue-Green Infrastructure in Neighborhood Liege Trigolipoint multimodal platform</p> <p>Organized visits to the private gardens of Liege Central Park of Antwerp</p>
Croatia	4	<p>Lake rejuvenation & park creation Park rejuvenation & creation of recreational & sports area</p> <p>Urban Gardens Zagreb Yearly maintenance of green surfaces</p>
Italy	3	<p>Urban Forest Enhancing a peri-urban area</p> <p>Recovery of the Royal Gardens</p>
Netherlands	3	<p>City Island Park Tour Food for Good</p> <p>Máximapark</p>

Country	Number of NBS	Name/Type of NBS
Sweden	2	Hyllie climate smart city district
Portugal	2	Botanical Garden Restoration Planting 100,000 trees
Poland	2	Community Garden Botanical Forest
Greece	1	Stavros Niarchos Foundation Cultural Center/Landscaped Park
Hungary	1	Rooftop Garden
Bulgaria	1	Park Museum Vrana
Romania	1	Community Garden
Estonia	1	Tondiraba eco-golf course



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