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| **Review comments on the draft monitoring framework for the post-2020 global biodiversity framework** |
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| ***General Comments*** |
| With more than half of the world’s population now living in cities, and with this percentage projected to increase to 68% by 2050[[2]](#footnote-2), it is ever more crucial that the Post-2020 Global Biodiversity Framework adequately take into account the relationship between biodiversity and urbanisation. Biodiversity within cities is critical because it contributes significantly to human well-being, and its loss adversely impacts urban dwellers. Cities are novel ecosystems with different disturbances and patterns[[3]](#footnote-3) and so should be addressed in particular. Conversely, urbanisation is likely to contribute to further biodiversity loss directly through expansion of urban areas (an additional 1.2 million km2 by 2030)[[4]](#footnote-4) and indirectly through the oversized ecological footprints of cities.[[5]](#footnote-5) To gauge the tensions and opportunities between urban dwellers and biodiversity, both data and indicators from the subnational levels of government, specifically cities and city regions, are needed to recognize and reflect this relationship. The nature in cities is perhaps the closest connection that urban dwellers may have to the natural world. Despite this fact, the only explicit reference made to either urban dwellers or cities in this document is in Target 11 with respect to increasing access to blue and green spaces for human health and well-being. While access to green and blue spaces is certainly important, it is not the only way that cities can and do contribute to biodiversity protection. According to the Urban Biodiversity Hub (UBHub) ([www.ubhub.org](http://www.ubhub.org)), an online platform that helps cities measure, promote, and assess their biodiversity strategies, cities are actively engaging in biodiversity awareness, protection, and integration into the urban planning and development process. In fact, UBHub’s publicly available database of urban biodiversity activities, and the largest database of its kind, shows that there are over 920 municipalities that are engaged in biodiversity-related activities. Of these, over 100 cities have created or adopted biodiversity plans. Drawing from our analyses of these municipal biodiversity plans, there is certainly a golden opportunity to include components, monitoring elements, and indicators to adequately capture and reflect these efforts happening at the subnational level (i.e., cities) within the monitoring framework for the post-2020 global biodiversity framework. The COVID-19 pandemic has begun conversations about defining a new normal and what the new normal might look like. It has further highlighted the importance for policy coherence at the national and subnational levels, as well as mutual support at all levels of decision-making for addressing complex, transboundary problems. We suggest the new normal include cities as active partners in helping to achieve the goals and targets of the post-2020 global biodiversity framework, and for this to be reflected in the framework itself. To this end, we identify new components, monitoring elements, and indicators, as well as offer suggestions for improving certain draft components and monitoring elements for the post-2020 global biodiversity framework to incorporate urban biodiversity conservation efforts for your consideration. |
| ***Specific Comments*** |
| **Table** | **Page** | **Column letter** | **Row number** | **Comment** |
| 2 | 25 | C | 152 | According to the UBHub database, over 100 municipalities have biodiversity plans[[6]](#footnote-6). The creation and implementation of local biodiversity strategies and action plans will further strengthen implementation of national biodiversity strategies and action plans. Hence, we suggest a NEW indicator for component T13.1 “Biodiversity reflected in policies and planning at all levels”: * Percentage of cities with Local Biodiversity Strategy and Action Plans in place

Data sources include: Cities or subnational governments, Urban Biodiversity Hub database – (currently available at [www.ubhub.org/map](http://www.ubhub.org/map) with data worldwide since 2000, updated annually)  |
| 2 | 14 | A | 73 | Actions related to the control and removal of IAS were also recorded in some city biodiversity plans that we researched. A major source of IAS in wildland/urban interface areas, from which they spread into wild areas, are urban/suburban landscaping and the "release" of pets and bait[[7]](#footnote-7). We suggest adding a NEW component for Target 5: Reform of commercial horticulture and husbandry practices, sale, use and demand for IAS. The proposed NEW monitoring elements for this NEW component are: * Trends in regulatory and educational efforts to reduce the demand, introduction, and propagation of IAS
* Trends in efforts to replace IAS products with native or non-invasive species (for example, plant materials in urban/suburban landscaping)
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| 2 | 20 | A | 117 | The 39 biodiversity plans in our recent research study also included urban agriculture as a topic. Increasing food security and resilience of urban dwellers through urban agriculture is of particular relevance in these times of a global pandemic. With governments placing restrictions on the movement of goods and people to curb the spread of COVID-19, the freight transport of food to urban centres from its hinterlands and beyond has been massively disrupted. What this underscores is the need for cities to encourage the growing of food close to home to reduce the movement of goods and increase resilience in times of crisis. Beyond addressing food security issues, urban agriculture allows urban dwellers to better connect with nature through the food they eat. As such, we are suggesting adding a NEW component for Target 9 which is: Support for sustainable urban agriculture The proposed NEW monitoring element for this NEW component is: * Trends in local government support for small scale urban agriculture initiatives (e.g., community gardens, home gardens, allotment gardens)

The proposed NEW indicator for the NEW monitoring element is:* Proportion of urban residents with access to gardens and locally-grown produce/farmers markets within 1 mile.

Data for the United States is available here <https://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas/> |
| 2 | 21-22 | B | 132 | The current indicator “Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities (SDG indicator 11.7.1)” addresses one aspect of “access” to green/blue spaces which is the amount or extent of such spaces. Another crucially important element of access is proximity coupled with accessibility. Hence, we are suggesting NEW indicators under monitoring element “Trends in access to green/blue spaces” that is associated with component T11.1 (Access to green/blue spaces):* Percentage of the urban population within a five minute walk of naturalized green/blue spaces that is open space for public use for all
	+ Data sources include: Local governments’ land use data
* Percentage of schools with close proximity to naturalized green spaces
	+ Data sources include: Ministries of Education, remote sensing data
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| 2 | 22 | B | 133 | Research[[8]](#footnote-8) showed that urban green space contributes to the health of city residents by decreasing all-cause and cardiovascular disease–related mortality, adverse birth outcomes, and mental disorders, particularly through providing regulating and provisioning ecosystem services and through cultural ecosystem services linked to socio-behavioural pathways.Hence, we suggest adding a NEW monitoring element for component T11.2:* Trends in contributions to human health and well-being from urban ecosystems

The proposed set of indicators for the NEW monitoring element above are:* Asthma rates among urban dwellers
* Temperature differential between urban and non-urban landscapes
	+ Data sources include: Remote sensing
* Percentage of hospitals with close proximity to naturalized green spaces
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| 2 | 37 | B | 232 | Public participation in biodiversity research has numerous benefits, including augmenting management plans, awareness raising, and education[[9]](#footnote-9). To help capture these benefits, we are suggesting a NEW monitoring element for component T19.4 (Availability of research and knowledge, including traditional knowledge, innovations and practices of indigenous peoples and local communities with their free, prior and informed consent):* Trends in involvement with participatory (citizen) science projects, and in life-long learning opportunities

The proposed indicator for the above proposed NEW monitoring element is:* Number of participants in participatory (citizen) science projects

Data sources include: SciStarter Database, iNaturalist, eBird (data updated on a continuous basis by users worldwide).  |
| 2 | 10 | B | 30 | In our analysis of actions in urban biodiversity plans, we found that *ecological connectivity* is among the most common topics in the 39 plans we sampled and analyzed[[10]](#footnote-10). With habitat fragmentation and the presence of physical features (e.g., tall buildings) impeding species movement being of particular concern for wildlife, cities are recognizing the critical role in connecting habitat patches within the otherwise predominant urban matrix. These efforts can contribute to biodiversity conservation within city boundaries and also connect regional conservation corridors[[11]](#footnote-11).As such, we are suggesting a NEW monitoring element for component T1.5 (Maintenance and restoration of connectivity of natural ecosystems): * Trends in ecological corridors in urban areas connecting intact natural areas

The suggested NEW indicators for the above NEW monitoring element are: * Percentage of urban streams that are conducive to fish and wildlife passage (daylit with naturalized edges and bottoms)
* Percentage of urban vegetated areas that are interconnected to one another and to regional habitats as part of a connectivity plan (no barriers to wildlife movement)
	+ Data sources include: Local government land use data and planning documents, remote sensing data
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| 2 | 12 | B | 54 | We also found native species counts to be among the most common topics included[[12]](#footnote-12). Although native species-related actions and measures within urban biodiversity plans generally focused on counting the frequency of species, either overall or within a certain category (i.e., plants, marine taxa, or birds), it does signal that cities are keen on contributing to their protection in some manner. Therefore, there is an opportunity here for a NEW monitoring element associated with component T3.1 (Active recovery and conservation management actions):* Trends in documenting and conserving species in urban areas

The proposed NEW indicators for the above component are:* Percentage of native tree species in urban forests
	+ Data sources include: iTree
* Percentage of native pollinators in urban and rural landscapes
	+ Data sources include: Great Sunflower Project (US only), iNaturalist (global)
* Percentage of native avian species in developed areas
	+ Data sources include: eBird
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| 2 | 9 | B | 24 | Another frequent topic in urban biodiversity plans we studied was natural areas[[13]](#footnote-13). Whether discussed in general (e.g., biodiversity spaces) or in more specific terms (e.g., meadows), cities are interested in protecting, managing, and restoring these significant areas within their jurisdiction. As such, there is an opportunity here for a NEW monitoring element associated with component T1.4 (Restoration of degraded ecosystems) in recognition of city efforts in restoring ecosystems in urban settings:* Trends in terrestrial, freshwater and/or marine ecosystems restored and managed within urban jurisdictions
	+ Data sources include: local governments
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*Comments should be sent by e-mail to* *secretariat@cbd.int****no later than 25 July 2020****.*

1. These comments were prepared by Dr. Sabrina Burgess-Drill and Michael Halder with support from Mika Mei Jia Tan and Jennifer Rae Pierce. [↑](#footnote-ref-1)
2. United Nations Department of Social and Economic Affairs. May 16, 2018. Available at: <https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html>. Accessed 25 July 2020. [↑](#footnote-ref-2)
3. Alberti, Marina. “Eco-Evolutionary Dynamics in an Urbanizing Planet.” Trends in Ecology and Evolution 30 (2015): 114–26. [↑](#footnote-ref-3)
4. McDonald RI, Colbert M, Hamann M, Simkin R, Walsh B, Ascensão F, et al. Nature in the Urban Century: A global assessment of important areas for safeguarding biodiversity and human well-being. Arlington (VA): The Nature Conservancy; 2018. Available at: <http://www.nature.org/urban100> [↑](#footnote-ref-4)
5. Folke, Carl, Åsa Jansson, Jonas Larsson, and Robert Costanza. “Ecosystem Appropriation By Cities.” Ambio 26, no. 3 (1997): 167–72. [↑](#footnote-ref-5)
6. Urban Biodiversity Hub. Available at [www.ubhub.org/map](http://www.ubhub.org/map). Accessed 25 Jul 2020. [↑](#footnote-ref-6)
7. <https://www.habitattitude.net/> [↑](#footnote-ref-7)
8. Van den Bosch, M and Ode Sang A (2017). Urban natural environments as nature-based solutions for improved public health – A systematic review of reviews. Environmental Research. 158: 373-384. Available at:

<https://www.sciencedirect.com/science/article/abs/pii/S0013935117310241?via%3Dihub>. [↑](#footnote-ref-8)
9. Tulloch A, Possingham H, Joseph L, Szabo J, Martin T (2013). Realising the full potential of citizen science monitoring programs. Biological Conservation. 165: 128-138. Available at:

 <https://www.sciencedirect.com/science/article/abs/pii/S0006320713001754>. [↑](#footnote-ref-9)
10. Pierce JR, Barton MA, Tan MMJ, Oertel G, Halder MD, Lopez-Guijosa PA, et al. (2020). Actions, indicators, and outputs in urban biodiversity plans: A multinational analysis of city practice. PLoS ONE 15(7): e0235773. https://doi. org/10.1371/journal.pone.0235773. [↑](#footnote-ref-10)
11. Bryant M (2006). Urban landscape conservation and the role of ecological greenways at local and metropolitan scales. Landscape and Urban Planning 76:23-44. [↑](#footnote-ref-11)
12. Pierce JR, Barton MA, Tan MMJ, Oertel G, Halder MD, Lopez-Guijosa PA, et al. (2020) Actions, indicators, and outputs in urban biodiversity plans: A multinational analysis of city practice. PLoS ONE 15(7): e0235773. https://doi. org/10.1371/journal.pone.0235773. [↑](#footnote-ref-12)
13. Ibid. [↑](#footnote-ref-13)