




Science-Based Targets for Nature in Cities

Land Use Development and Sprawl
Executive Summary

INITIAL GUIDANCE FOR LOCAL GOVERNMENTS



May 2026

Science-Based Targets for Nature in Cities

Land Use Development and Sprawl Executive Summary

Authors

Jennifer Rae Pierce
Anushri Tiwari
Maitreyi Koduganti Venkata
Pablo Arturo López Guijosa



Guidance developed by:

Tenesha Caton
Thomas Rieff
Rianne Stelwagen
Jonathan Aronson
Twin de Rooy



Metabolic

Managed by:

Sophie Hendriks
Erin Billman
Erin O'Grady
Varsha Vijay



**SCIENCE BASED
TARGETS NETWORK**

Steering Committee Partners

Erin Kennedy
Gerard Roemers



Harriet Bulkeley



Tony Nello
Loredana Scuto



Arminel Lovell
Nicole Hardiman
Norma Mercedes Pedroza
Arceo



Robert McDonald



Siyasanga Sauka



Victoria Olausson
Jennifer Lenhart
Jordana A. HARRISS
Alizée Masson



Julie Goodness
Ingrid Coetzee



Dima Zogheib
Tom Butterworth



Acknowledgments

The Science-Based Targets Network (SBTN) is a group of organizations working to shape private sector and city impacts on nature by using science-based targets. SBTN provides science-based methods and tools to set measurable, actionable targets that align with Earth's ecological boundaries. This guidance for cities builds on SBTN's established frameworks for corporate sustainability and climate action, extending these principles to urban biodiversity and ecosystem management. Find out more at <https://sciencebasedtargetsnetwork.org/>

This guidance was developed through collaboration between Arup, C40, CDP, Durham University, ICLEI, IUCN, The Nature Conservancy, WRI, and WWF, coordinated by Metabolic and Urban Biodiversity Hub. We thank the local government officials, practitioners, and experts who contributed through workshops, interviews, and feedback sessions to ensure this guidance meets the practical needs of cities worldwide.

About This Document

This executive summary provides practical guidance for city staff on how to assess and set targets to reduce biodiversity loss from land use development and sprawl. It distills the more detailed SBTN Cities Guidance for Local Governments on the same theme into a concise format for direct application, focusing on the steps required to translate global nature-positive goals into actionable city-level targets.

Table of Contents

Acknowledgments	4
1. Introduction	6
Why This Matters	6
2. Programme Overview and Prerequisites	6
Overview of the guidance steps	6
Equity and Justice are prerequisites	8
3. Step 1: Establish Your City Context	8
Ecosystem Types	8
Data Availability	9
Policy Context	10
Capacity to Act	12
Key Concepts for Target-Setting	14
Developing Your Capacity Profile	15
4. Step 2: Assess Human Pressures and Prioritize the State of Nature	17
Required Indicators	17
Evaluate Human Pressures on Nature: Land Development and Sprawl	17
Evaluate the State of Nature	18
Baseline Assessment	19
Addressing Common Challenges	19
5. Step 3: Set Targets	22
Pressure Reduction Targets	22
Nature Enhancement Targets	23
Ensuring Target Alignment	27
6. Next steps	29
Future Iterations	29
Call to Action	29
7. Definitions	30
8. Illustrative Example: City Verdantia Step 1 Summary Profile	31
9. Resources	35

1. Introduction

Cities house over half the world's population and are major drivers of environmental change. This guide provides a practical, science-based approach for local governments to assess and reduce the impacts of **land use development and sprawl** on urban nature. This pilot theme was selected as it directly addresses land use change—the primary driver of global biodiversity loss—and falls within local government jurisdiction and planning authority.

Land use development and sprawl refers to the expansion and infill of urban and surrounding lands with built-up and artificial areas. This includes conversion of natural habitats, infrastructure development, and deforestation, resulting in habitat loss, fragmentation, degraded ecosystem services, and reduced soil quality.

This guide walks you through three essential steps for setting targets for nature in cities:

1. **Understanding your city context** - Define your ecosystems and capacity
2. **Assess and prioritize** - Measure pressures and nature's state
3. **Set targets** - Establish measurable goals for 2030 and beyond

Future versions will expand to address additional urban pressures including water use, pollution, and other drivers of nature loss.

Why This Matters

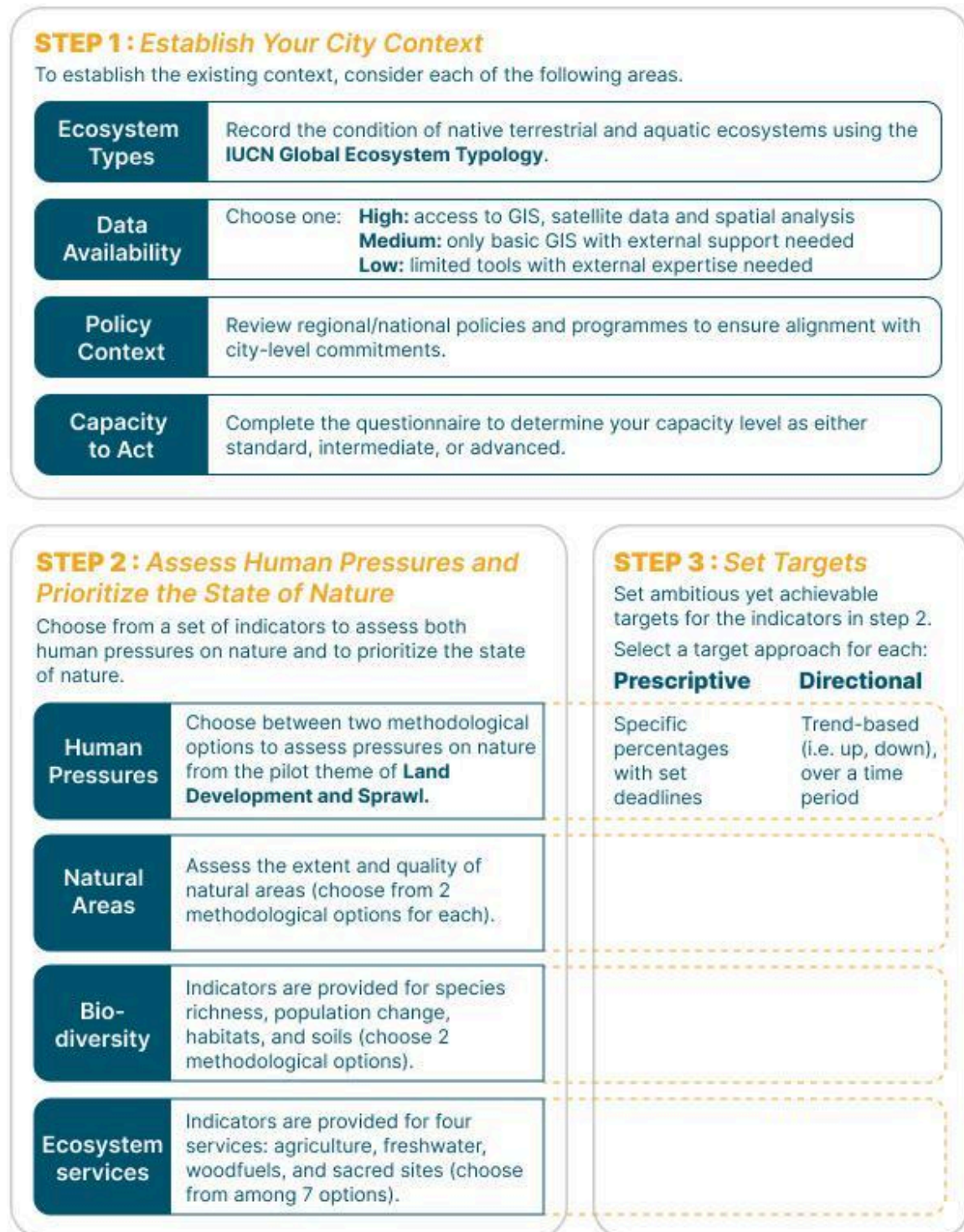
- Cities can reverse biodiversity loss while improving quality of life
- Clear targets enable tracking progress and comparing across cities
- Actions taken now determine whether we achieve nature-positive cities by 2030

2. Programme Overview and Prerequisites

Overview of the guidance steps

This guidance follows a structured approach to help your city set and achieve nature targets. Each step builds on the previous one, creating a comprehensive framework for urban nature management that aligns with global biodiversity goals while addressing local priorities (see Fig. 1).

Figure 1: Step-by-Step Framework for Setting Urban Nature Targets





Equity and Justice are prerequisites

Successful implementation requires embedding equity and justice throughout the process. Your city should make a good faith effort to include stakeholders who are more vulnerable or equity-deserving by reaching out for meaningful participation from Indigenous Peoples, marginalized communities, and underserved populations. This requires transparent decision-making processes, established dispute resolution mechanisms, and equitable sharing of costs and benefits.

This program calls for cities to balance nature enhancement with social needs by maintaining access to fundamental needs for all such as food, water, and housing while considering educational opportunities, public safety, and economic growth. Ensure that the benefits of ecosystem services are designed to reach vulnerable communities in particular and are distributed more equitably.

In practice, this means prioritizing locations that benefit underserved communities when restoring degraded areas, ensuring green space expansion addresses historical inequities in park access, and compensating community members fairly for participation in monitoring programs. These considerations are not optional add-ons but fundamental prerequisites for achieving truly sustainable and just nature-positive outcomes.

3. Step 1: Establish Your City Context

This step helps your city build a clear diagnostic picture of its context before selecting indicators or setting targets. It guides you to map and classify ecosystem types and their condition, assess data and methodological capacity, review existing policy and governance settings, and develop a qualitative profile of your technical, institutional, and financial capacity to act. Together, these elements ensure that subsequent indicator choices (Step 2) and targets (Step 3) are grounded in the ecosystems you actually have, the data and policies already in place, and the level of ambition that is realistically achievable in your next planning cycle, while remaining aligned with the SBTN framework.

Before setting targets, establish your context by assessing four key elements that will shape your approach throughout the process; **ecosystem types, data availability, policy context, and capacity to act.**

Ecosystem Types

This step establishes a diagnostic baseline of urban nature in the city. Its purpose is to identify what kinds of ecosystems exist within the jurisdiction, where they are located, how extensive they are, and in what broad condition they are found. Any simple typology with well-defined ecosystem types can be used to structure this overview, for example: terrestrial remnant ecosystems, agrarian and production landscapes, aquatic and riparian systems, designed vegetated areas, engineered blue-green infrastructure, and highly artificial or sealed areas.

To apply this step, your city uses the typology in Table 1 to classify all mapped vegetated, aquatic and sealed units within its boundary. Each polygon or segment is assigned a broad ecosystem group, a specific sub-type where relevant, and a simple condition class. Together, these attributes provide a standard basis for summarising the ecological focus of each ecosystem type and for constructing the spatial baseline used in later steps.

Table 1. Urban ecosystem typology: groups, sub-types, condition and ecological focus as a case example

Broad ecosystem group	Typical sub-types found in cities	Condition	Examples of ecological focus (non -exhaustive)
Terrestrial remnant ecosystems	Natural/semi-natural forests; Woodlands, scrub; Remnant grasslands and savannas; Rocky outcrops; Dunes.	Intact / moderately modified / heavily degraded	Structural habitat quality, native biodiversity, connectivity, microclimate regulation, erosion control.

Undertaking this step is necessary because it grounds the upcoming indicator selection and target-setting in the actual ecosystems present, rather than in generic notions of “urban green space”. It allows the city to differentiate its ecological profile (for example, wetland-dominated, forest-rich, highly sealed or agrarian), identify which ecosystems are most intact or most degraded, and provides a shared, transparent basis across departments for deciding where conservation, restoration and Nature-based Solutions (NbS) investments are most warranted.

For illustration, in the fictive City Verdantia, this step reveals three heavily degraded wetlands and several moderately modified canals within the “Aquatic and riparian” group, relatively intact remnant forests in the “Terrestrial remnant” group, and extensive, completely sealed road and plaza surfaces. Verdantia would then note possible indicators for wetlands (e.g. water quality, wetland-dependent species, flood-storage capacity), forests (e.g. canopy cover, forest biodiversity, connectivity), and sealed areas (e.g. imperviousness, heat-island intensity, retrofit potential). These preliminary indicators are then tested in the next step against data availability, existing policy commitments and institutional and financial capacity.

Data Availability

To complete this step, you will also assess your city’s overall data and methodological capacity so that indicator choices and measurement approaches are realistic and feasible. This will help you determine whether your city should initially apply core (basic) methodologies or whether it can already implement more comprehensive (data- and capacity-intensive) methodologies for each indicator. Rather than focusing on individual indicators, completing an assessment of your overall data availability provides a high-level diagnostic of the types of data your city can reliably access, generate, and analyse.

Using Table 2, your city can carry out a simple self-assessment of its overall data and methodological capacity. Rather than examining each indicator separately, you review how well you can access and work with the main data and method types that underpin the indicators and judge whether these sit closer to the comprehensive or core end of the spectrum. The resulting profile shows where comprehensive methodologies are credible and where the city should initially rely on core approaches or external support.

Table 2. Review data and methods to determine your capacity level for choosing indicator methodology

Indicator Type	Comprehensive	←-----→	Core
Geospatial data (e.g. satellite data)	Advanced use of GIS, satellite and spatial plans: city has technical expertise to process and analyze data.	Access to GIS and satellite and spatial plans with some expertise: may require external support for processing data.	Limited or no access to geospatial data or plans: relies on external partners.
Existing public datasets	Able to access, integrate, and analyze public datasets efficiently.	Access to public datasets but limited capacity for in depth analysis.	Relies on basic use of public datasets without significant analysis.
Existing regional/national research done by research institutions (e.g. universities)	Strong partnerships with research institutions for access to detailed regional/national research.	Moderate collaboration with institutions: uses research but may lack capacity to analyze it fully.	Limited access to or collaboration with research institutions.
Primary data collection by surveys (data from citizens and/or businesses)	Skilled staff, tools, and resources to design, distribute, and analyze complex surveys.	Capacity to conduct basic surveys, may rely on external help for design or analysis.	Limited capacity to conduct surveys: relies on external partners or simplified methods.

Undertaking this assessment is necessary because it aligns ambition with what is measurable, avoiding indicators that look appealing on paper but are not supported by available data or institutional capacity. It helps ensure that selected indicators in Step 2 are not only relevant to the city's ecosystems and policy priorities, but also accompanied by feasible methods and realistic resource demands. This, in turn, reduces the risk of data gaps, stalled monitoring efforts, or indicators that cannot be updated over time.

For example, in the fictive City Verdantia, this step reveals relatively strong capacity for geospatial analysis (staff trained in GIS and access to satellite imagery and spatial plans) and good collaboration with a local university that can support analysis of regional research. However, Verdantia has only limited capacity to design and analyse complex surveys and conducts only small-scale, occasional field campaigns. On this basis, Verdantia decides that indicators relying heavily on spatial data (e.g. land-cover change, extent and condition of wetlands or remnant forests) can use comprehensive methodologies, whereas indicators requiring intensive survey or field-based data (e.g. detailed household vulnerability assessments or fine-scale biodiversity sampling) will initially be implemented using core methods or simplified proxy measures, potentially with targeted support from external partners.

Policy Context

The third part of this step is an assessment of your city's existing policy and governance landscape. This ensures that your indicator selection and target-setting will build on your current

commitments and priorities. The aim is to understand how nature, ecosystem services, climate resilience, land use and social equity are already reflected in city, regional and national policies, and how existing mandates and instruments shape what is realistic and legitimate to monitor. In doing so, the step clarifies how the guidance can align with, and strengthen, ongoing nature- and climate-related efforts, including SBTN-style target-setting.

To structure this review, your city can draw on the guiding questions in Table 3. The table organises questions by focus area (such as scope of policies, ecosystem services, biodiversity and habitats, spatial focus, indicators and monitoring, institutions and mandates, financing, participation and equity, and policy gaps or conflicts) to support both document review and stakeholder discussions. Cities can select and adapt the questions most relevant to their context rather than answering every item in full. The guidance document entails more focus areas which cities can use as a reference.

Table 3. Illustrative focus areas and guiding questions for reviewing the city's existing policy and governance context

Focus area	Illustrative Guiding questions
Scope of policies	<ul style="list-style-type: none"> • Which policies, plans, and programmes explicitly mention nature, ecosystem services, biodiversity, climate resilience, or urban greening? • At which levels do they operate (city, metropolitan/regional, state/provincial, national)?
Ecosystem services	<ul style="list-style-type: none"> • Which ecosystem services are explicitly or implicitly prioritised (e.g. air quality, urban cooling, stormwater management, flood regulation, recreation, food production, cultural values)? • Are key services for vulnerable groups or priority neighbourhoods recognised?
Biodiversity & habitats	<ul style="list-style-type: none"> • Do existing policies identify priority species, habitats, or ecological corridors in the city (e.g. wetlands, rivers, remnant forests, coastal ecosystems, peri-urban agriculture)? • Are there quantitative or qualitative targets for these (e.g. “no net loss of wetlands,” “X% increase in tree canopy”)?

The resulting policy-mapping table given in table 4 links each policy to its nature objectives, existing indicators and data, and observed gaps or misalignments.

Table 4. Policy-mapping template across city, regional and national scales for nature and ecosystem governance

Scale	Policy / Plan / programme	Nature / ecosystem objectives or targets	Main ecosystem services / habitats (Focus on those identified in Step 3.1)	Existing indicators / data	Key gaps or conflicts
City/Local					
Regional/ Sub National					
National					

Undertaking this step ensures the framework is anchored in the city's institutional reality. It reveals which ecosystem services, habitats and social groups are already prioritised, which indicators and datasets are already being collected by different departments, and where mandates overlap, conflict or leave critical gaps. This supports a coherent chain from existing commitments and

instruments to new or refined indicators, baselines and SBTN-consistent targets. It can also reveal opportunities to improve equity, participation and financing mechanisms around nature-related policies.

In the fictive City Verdantia, applying this step through the policy-mapping template shows that national climate policy promotes urban greening and cool roofs but does not specify local canopy targets. The regional climate resilience plan identifies Verdantia as a heat-stress hotspot and recommends increasing tree cover in dense neighbourhoods; the city climate action plan includes a general objective to reduce heat stress through green infrastructure but only tracks the number of trees planted, without spatial or equity dimensions. No policy defines minimum canopy cover for high-risk districts, and no department is responsible for mapping tree canopy or surface temperature. On this basis, Verdantia decides to use the policy-mapping table (illustrated in Table 4) in subsequent steps to design urban-cooling indicators that (i) align with higher-level strategies, (ii) embed spatial targeting and equity (e.g. focusing on heat-stress wards and low-income neighbourhoods), and (iii) assign clear responsibilities for monitoring canopy cover and heat reduction outcomes.

Capacity to Act

In this step, you will review your city's capacity to set, implement, and track targets for urban nature, without yet defining the targets themselves. The aim is to understand how ambitious and specific your targets can realistically be in the next planning cycle. Capacity is considered across three interconnected dimensions—technical, institutional, and financial—which together determine how far your city can go in translating indicators into equitable, context-specific, and actionable targets.

To operationalise this, the city reflects on each capacity dimension in turn. Technical capacity covers staff skills, tools, and data for assessing ecological conditions and monitoring change (e.g. trained personnel in ecology, urban forestry, GIS, statistics; ability to conduct assessments; access to spatial and monitoring data; use of remote sensing and open-source tools). For each dimension, the city identifies concrete evidence, considers implications for how prescriptive or directional its targets can be, and notes illustrative actions to strengthen capacity.

Table 5. Key capacity dimensions and implications for target-setting

Capacity dimension	Considerations	Implications for target-setting	Illustrative actions to strengthen capacity
<p>Technical capacity:</p> <p>Skills, tools, and data needed to assess ecological conditions and monitor change.</p>	<p>Staff with training in ecology, urban forestry, environmental science, GIS, statistics;</p> <p>Ability to conduct biodiversity or ecosystem assessments; access to spatial and monitoring data;</p> <p>Use of remote sensing or open-source tools.</p>	<p>High technical capacity supports prescriptive targets with quantitative baselines and trend improvements (e.g. “increase canopy cover by X% by year Y”).</p> <p>Emerging capacity may favour directional targets (e.g. “increase street-tree cover”) until stronger baselines and monitoring systems are in place.</p>	<p>Train staff in ecological assessment, monitoring, and data analysis;</p> <p>Adopt standard monitoring protocols; engage citizen science to expand data collection;</p> <p>Build partnerships with universities, research institutions, and NGOs;</p> <p>Use open-source GIS and remote-sensing tools.</p>
<p>Institutional capacity:</p> <p>Governance arrangements, mandates, and political support for nature.</p>	<p>Existence of a biodiversity or nature office or working group;</p> <p>Integration of nature in planning, transport, and infrastructure decisions;</p> <p>Presence and implementation of biodiversity strategies or action plans;</p> <p>Level of political priority for nature.</p>	<p>Strong institutional capacity allows cities to commit to advanced prescriptive targets and to coordinate implementation across departments.</p> <p>Where institutional capacity is still developing, cities may start with standard-level targets aligned with current mandates and use early results to build broader political and organisational support.</p>	<p>Designate a lead unit for nature initiatives and create inter-departmental coordination mechanisms;</p> <p>Develop or update local biodiversity strategies and NbS plans;</p> <p>Build political support through demonstration projects and communication of co-benefits (climate resilience, health, economic value);</p> <p>Participate in city networks and peer-learning platforms.</p>
<p>Financial capacity:</p> <p>Resources available to implement and sustain nature-related actions.</p>	<p>Dedicated budget lines for biodiversity or green infrastructure; access to external funds (national programmes, climate funds, foundations); ability to co-finance projects; predictability and stability of funding; capacity to prepare funding proposals.</p>	<p>Stable, dedicated funding enables intermediate or advanced prescriptive targets that require sustained investment (e.g. large-scale restoration, extensive green infrastructure, long-term monitoring).</p> <p>Limited or uncertain funding may call for standard-level prescriptive targets in priority areas, complemented by directional targets that depend on mobilising future resources.</p>	<p>Secure dedicated annual budgets for nature and integrate NbS into existing infrastructure budgets;</p> <p>Prepare investment cases that quantify ecosystem service benefits;</p> <p>Diversify funding sources (national funds, multilateral finance, private partnerships, philanthropy);</p> <p>Explore innovative instruments (green bonds, PES, offsets) where appropriate.</p>

Key Concepts for Target-Setting

Before developing your capacity profile, it is important to understand three classification systems that will guide your indicator selection and target-setting in subsequent steps. These concepts—capacity ratings, target types, and ambition levels—work together to help your city set realistic, appropriately ambitious targets.

Capacity Ratings

Capacity ratings describe your city's current readiness to set, implement, and monitor nature targets. Use the definitions in Table 6 to rate each dimension (technical, institutional, financial) based on your assessment.

Table 6. Capacity rating definitions

Rating	Description
Emerging	Limited dedicated staff, tools, or budgets; responsibilities fragmented or unclear; nature not yet a stated policy priority; monitoring ad hoc or project-dependent.
Moderate	Some trained staff and established processes; nature recognised in policy but not consistently prioritised; coordination improving but still partial; funding available but not secure or dedicated.
Strong	Dedicated teams with specialist expertise; clear mandates and cross-departmental coordination; nature embedded in planning and budgeting cycles; stable, multi-year funding in place.

Target Types

Target types describe *how* targets are expressed. The choice between prescriptive and directional targets depends primarily on your technical capacity—specifically, whether you have reliable baselines and monitoring systems in place.

Table 7. Target type definitions

Target Type	Definition	Example
Prescriptive	Quantitative targets specifying a measurable outcome, magnitude of change, and timeline. Requires reliable baseline data and monitoring capacity.	Increase district-level canopy cover by 15% by 2030.
Directional	Trend-based targets indicating the desired direction of change without fixed quantities. Appropriate where baselines or monitoring capacity are not yet sufficient for precise commitments.	Increase street-tree cover in heat-stressed neighbourhoods.

Ambition Levels

Ambition levels describe *how far* targets aim to go. The choice of ambition level depends primarily on your institutional and financial capacity—specifically, whether you have the governance arrangements, political support, and resources to deliver on more stretching commitments.

Table 8. Ambition level definitions

Level	Description
Standard	Targets aligned with existing mandates and achievable within current resources; represent a credible starting point.
Intermediate	Targets that stretch beyond business-as-usual but remain feasible with moderate investment in capacity or resources.
Advanced	Ambitious targets requiring significant new investment, cross-sectoral coordination, or systemic change; appropriate where strong capacity exists or is being built.

How Target Type and Ambition Level Combine

The two classifications work together. A city selects a *target type* (prescriptive or directional) based on data and monitoring readiness, and an *ambition level* based on institutional and financial capacity. Table 9 illustrates how these choices combine, using an urban cooling indicator (canopy cover in heat-stressed areas) as an example.

Table 9. Matrix of target type and ambition level with illustrative examples

	Standard	Intermediate	Advanced
Prescriptive	"Increase canopy cover in priority heat-stressed wards by 5% by 2030."	"Increase canopy cover in all heat-stressed wards by 15% by 2030, with no ward below 10% cover."	"Achieve 25% canopy cover in all heat-stressed wards by 2030, closing the gap with city average."
Directional	"Increase tree planting in identified heat-stressed neighbourhoods."	"Progressively expand canopy cover across heat-stressed areas, prioritising lowest-cover wards first."	"Systematically eliminate canopy-cover disparities between heat-stressed and other neighbourhoods."

In general, cities with strong technical capacity (reliable baselines, established monitoring systems) can set prescriptive targets. Cities with emerging technical capacity may begin with directional targets while building monitoring systems. Ambition level is then calibrated to institutional and financial capacity: cities with stronger capacity in these dimensions can aim higher within whichever target type they select. As capacity develops over successive planning cycles, cities can progress from directional to prescriptive targets, and from standard to intermediate or advanced ambition levels.

Developing Your Capacity Profile

Using Table 5 and the definitions above, develop a concise capacity profile by rating each dimension—technical, institutional, and financial—as *emerging*, *moderate*, or *strong*. Provide short justifications grounded in existing staff, plans, partnerships, budgets, and projects.

This profile shapes Step 3 in two ways: it guides whether targets should be prescriptive or directional, and it calibrates ambition level (standard, intermediate, or advanced). Cities with strong capacity across all three dimensions can commit to ambitious prescriptive targets with clear

percentage improvements and shorter timelines. Cities with emerging or moderate capacity may focus on standard-level prescriptive targets for a limited set of critical indicators, complemented by directional targets where baselines or resources are not yet in place.

Completing Step 1: Summary Profile

At the end of Step 1, your city should compile its findings into a summary profile that consolidates all four elements of your context assessment: ecosystem types, data availability, policy context, and capacity to act. This profile serves as the foundation for selecting indicators (Step 2) and setting targets (Step 3). Table 10 provides a template for organising your summary profile.

Table 10. Step 1 Summary Profile template

Section	Key Questions to Answer
1. Ecosystem Overview	What ecosystem types are present? What condition are they in? Which are priorities for protection, restoration, or NbS investment?
2. Data and Methodological Capacity	For which indicator types can you use comprehensive methodologies? Where should you rely on core methods or external support?
3. Policy Context	What existing policies address nature, climate, or land use? What indicators are already tracked? Where are the gaps or misalignments? What alignment opportunities exist?
4. Capacity to Act	What are your ratings (emerging/moderate/strong) for technical, institutional, and financial capacity? What justifies each rating?
5. Implications for Steps 2 and 3	What indicator methodologies are feasible? What target types are appropriate? What ambition levels are realistic? What should your priority focus areas be?
6. Capacity-Building Priorities	What actions would strengthen capacity for future planning cycles?

4. Step 2: Assess Human Pressures and Prioritize the State of Nature

This step will help your city select indicators that accurately reflect local pressures and the state of nature by providing a structured menu of required and optional indicators tailored to different contexts. The guidance includes alternative and proxy measures where local data are limited, directs cities to global datasets when needed, and clarifies appropriate use of common tools. This ensures cities can choose indicators that are both measurable and meaningful while remaining aligned with the SBTN framework.

Select and measure indicators to understand both the pressures on nature from the city and nature's current status. This dual assessment provides the foundation for setting meaningful targets. See Table 2 at the end of this section for an overview of all indicators with examples that you can use to track your selections, and see section 8 for more information on all the indicator sources referenced herein.

Required Indicators

A set of **six minimum indicators** are required to provide the minimum viable assessment for setting meaningful targets. Within the evaluation topics, options may be provided to accommodate local priorities, contexts, and environmental challenges. The number of required indicators for this topic is kept to a minimum to ensure regular monitoring is feasible, but cities may choose additional indicators from the options provided.

Table 11. Indicator Selection Framework

#	Evaluation Topic	Required	Options (selection based on local capacity/relevance)
A	Land Development and Sprawl Pressure	1 indicator	Select core or comprehensive method.
B	State of Natural Areas	2 indicators	Select one each for extent and quality.
C	State of Biodiversity	2 indicators	4 Indicators are provided to choose from.
D	State of Ecosystem Services	1 indicator	4 indicators are provided to choose from.

Evaluate Human Pressures on Nature: Land Development and Sprawl

The required indicator for assessing pressures from land development and sprawl is **land conversion**, which measures the relationship between urban expansion and population growth to assess sprawl patterns. This city-wide indicator captures total land conversion from all sources including buildings, infrastructure, agriculture, and industry. There are two methods to calculate land conversion, depending on data availability. Refer to Box 7 in the detailed SBTN Cities Guidance for Local Governments for an illustration.

Table 12. Indicator, methodological options, and corresponding resource

Indicator	Methodological Options	Resource (see Table 2)
Land Conversion	Core: Average population density of developed land (i.e. excluding undeveloped and restored/naturalized land) within the boundaries of the local government area = Total Developed Land Area / Total Population	IUCN Urban Nature Indexes (UNI) indicator 2.1
	Comprehensive: Annual land consumption rate / Annual population growth rate	SDG Indicator 11.3.1

Evaluate the State of Nature

Evaluate three interconnected themes to understand your city's current ecological condition; **state of natural areas, biodiversity, and ecosystem services**.

Theme 1: State of Natural Areas

Choose one approach each for the extent and quality of natural areas and calculate their percentage across the entire city area. Refer to Box 8 in the detailed SBTN Guidance for Local Governments for an illustration.

Table 13. Indicator, methodological options, and corresponding resource for State of Natural Areas

Indicator	Methodological Options	Resource (see Table 2)
Extent of Natural Areas	% healthy ecosystems, including both terrestrial and aquatic areas	EUBI L03, C04
	% vegetation cover (may adjust according to ecosystem type)	UNI 3.4
Quality of Natural Areas	% or share of areas that are currently degraded	SBT 1.6 (Pg. 66)
	% protected areas and other effective conservation measures	UNI 3.1; CBI 8

Theme 2: State of Biodiversity

Choose two indicators from those listed below. If data is available, indicators should be measured at the ecosystem level rather than city-wide to capture habitat-specific variations. Refer to Box 9 in the detailed SBTN Cities Guidance for Local Governments for an illustration.

Table 14. Indicator, methodological options, and corresponding resource for State of Biodiversity

Indicator	Methodological Options	Resource (see Table 2)
Species richness	Species richness in at least 5 locations across the city	UNI 4.1, 4.2
	Species richness by habitat type	EUBI C07
Population change	Measures changes in population of birds and pollinators associated with specific habitats using 1990 as reference year.	EUBS 4.1.1
Habitats	Connectivity of natural areas	UNI 3.5; CBI 2
Soils	Soil health measures, such as decomposition rates	UNI 4.4; IEFS 02

Theme 3: State of Ecosystem Services

Select at least one indicator from the list below, according to city priorities and capacity. Refer to Box 8 in the detailed SBTN Cities Guidance for Local Governments for an illustration.

Table 15. Indicator, methodological options, and corresponding resource for State of Ecosystem Services

Indicator	Methodological Options	Resource (see Table 2)
Access to Nature	Proximity is measured in terms of the proportion of the population living within walking distance (400m) from a park or green space.	CBI13A
	Nature can be accessed by what share (%) of the total people living in the city	CwN
	Total annual number of visitors to vegetated and/or natural open areas. Counts and/or estimates are acceptable	UNI 5.1
Agriculture	Agricultural areas based on good management practices or operational requirements.	FAO 8.1.1 ; CBI14
	Area (km ² or ha) of land use, including known land management practices (e.g., crop use change rotation, tillage practices, or fire regimes).	SBT (Table 6, Pg. 54)
	Area (km ² or ha) converted since 2020 (or earlier cutoff dates),* by pre- and post-conversion ecosystem type and category of land use.	SBT (Table 6, Pg. 54)
Freshwater	Freshwater consumption rates vs. locally sustainable levels.	UNI 1.5
	Monthly or annual volume (m ³ /month or km ³ /year), per source (surface water, groundwater, municipal grid, etc.)	SBT (Table 6, Pg. 54)
Woodfuel	Woodfuel consumption balances.	FAO WISDOM method
Sacred Sites	Protection and recognition of Sacred Sites	UNI 5.5

Baseline Assessment

Once you've selected and measured your indicators, record the baseline year (typically your first measurement year), the exact methodology used, and the initial values. This becomes your reference point for all future monitoring and target-setting (see example in Table 16).

Addressing Common Challenges

Cities often struggle with indicator selection by trying to measure everything at once. Start with the required set and add optional indicators gradually as your capacity grows. Avoid selecting

indicators just because data exists if they don't address your actual conservation needs. Avoid selecting more challenging methods if you can't sustain the measurement effort annually. Partnering with local institutions, such as botanical gardens, universities, museums, community conservation groups, and environmental NGOs can help lighten the load on local governments. Consistency over time matters more than perfection in the first year.

Table 16. Overview indicators table illustrating an example baseline assessment for each indicator. Note that not all indicators are required to be complete.

Land Conversion	UNI 2.1	1997	Bagota's (Colombia) urban footprint increased 15.34% (1997–2016); projected to exceed 50% of city's territory by 2050
Theme 1: State of Natural Areas			
Extent of Natural Areas	EUBI L03	2023	Capetown (South Africa) has ~55,000 ha conserved (~22.3% of total municipal area)
Extent of Natural Areas	EUBI CO4	2011	Berlin (Germany) has 54 km ² of water bodies
Extent of Natural Areas	UNI 3.4	2018	In Chennai (India) , 64.06 sq km (15%) accounts for green cover
Quality of Natural Areas	SBT 1.6	2006–2022	Lecce (Italy) , the areas classified as in degradation are high, representing about 47% of the total area
Protected area & OECMs	UNI 3.1; CBI 8	2025	Tlalpan (Mexico) borough in New Mexico city has around 80% of the borough's territory under conservation status
Theme 2: State of Biodiversity (pick at least one for species and habitats each)			
Species Richness	EUBI C07/ UNI 4.1, 4.2	2008	Cardiff (U.K) outlines the various critical habitats and respective species action plan
Population Change	EUBS 4.1.1	2023	Budapest (Hungary) , has prepared a guideline to monitor Pollinator's population through science based methods.
Habitats	CBI 2	2022	Faridabad (India) scored 4 on connectivity indicator
Soils	UNI 4.4; IEF5 02	2018	In Zurich (Switzerland) , researchers conducted a study with 37 soil quality indicators, measured at 170 plots in 85 urban gardens.

Indicator	Methodology Selected	Baseline assessment example	
		year	value
Theme 3: State of Ecosystem Services (pick at least 1)			
Access to Nature	CBI 13A, CwN, UNI 5.1	2023	Glasgow's Open Space Strategy (OSS) sets an accessibility standard that all homes (including purpose-built student accommodation) outside the city centre should lie within an actual walking distance of 400 m to a publicly usable open space of at least 0.3 ha.
Agriculture	SBT (Table 6, Pg. 54)	2018	Pune (India) has included 18 acres of urban farms as part of their Smart City project
Freshwater	UNI 1.5	2024	13% of permitted values of freshwater extraction (from Victoria, B.C.)
Woodfuel	FAO WISDOM method	2008	Urban woodshed in Phnom Penh (Cambodia) , in its most comprehensive delineation (expanded-commercial supply zone), was estimated in 2000 to cover over 70 000 km ² , or 39% of Cambodia.
Sacred Sites	UNI 5.5	2015	Kathmandu (Nepal) has identified 7 tangible cultural heritage sites.

5. Step 3: Set Targets

This step will help your city translate the assessment from step 2 into clear, science-based targets that are achievable within your capacity. The guidance provides both prescriptive and directional target options, allowing cities to set measurable goals where there is sufficient clarity and flexible goals where uncertainty remains. It also includes examples that show how indicators link to targets, guidance on selecting appropriate time horizons, and alignment with global frameworks. This ensures that your targets are ambitious, context-appropriate, and actionable.

Based on your assessment, set measurable, time-bound targets to reduce land conversion and enhance natural ecosystems. Your targets should be ambitious enough to contribute to global goals while remaining achievable given your local context and capacity.

We provide example targets and indicate their alignment to global goals to inform your own target-setting process. However, we acknowledge that all cities start in a different place so you may need to adjust targets up or down or even change the target type to meet your needs.

Target Type

- **Prescriptive targets** are required for critical indicators and include specific percentage improvements with clear timelines for set years such as 2030, 2040, or 2050. These targets are scaled based on your capacity and political reality.
- **Directional targets** provide flexibility where precise quantification is challenging. While these don't require fixed percentages or timelines, cities are strongly encouraged to make directional targets quantitative where possible to enable progress tracking.

Collaboration and Equity

Achieving nature targets requires collaboration well beyond city government, as many outcomes depend on actions by businesses, landowners, and residents. Involving these stakeholders during target-setting—not just implementation—creates shared ownership and ensures targets are both feasible and supported by those whose participation is essential. This collaborative approach must be grounded in equity and justice principles, as conservation efforts without explicit equity focus risk reinforcing existing inequalities and leaving marginalized communities without access to nature's benefits. In practice, this means prioritizing restoration in areas that serve underserved populations, ensuring biodiversity hotspots near vulnerable communities provide accessible ecosystem services like cooling and flood protection, addressing historical inequities by expanding green spaces in park-deprived neighborhoods, and distributing new green infrastructure investments equitably across income levels. These considerations transform target-setting from a technical exercise into a process that strengthens both ecological resilience and social justice, creating legitimacy and broad support for nature-positive urban transformation.

Pressure Reduction Targets

This prescriptive target progressively restricts the conversion of natural ecosystems (forests, wetlands, grasslands) to intensively used areas (buildings, infrastructure, industry, agriculture) while recognizing that some development for public interest may be necessary. The targets

become increasingly stringent over time, ultimately achieving no net conversion by 2050 for all capacity levels.

Development projects must incorporate biodiversity preservation and avoid critical ecosystems first. Absolutely unavoidable land conversion must minimize ecological damage through careful site selection, comprehensive mitigation measures during development, and—only when direct impacts cannot be prevented—restoration of already degraded areas elsewhere that provides equivalent or greater ecological value, not as a license to destroy intact ecosystems but as a last resort.

Table 17. Targets for Land Conversion Due to Development and Sprawl

Target Type	Entry-level Target Example (first 5-10 years)	Intermediate Target (10-20 years)	Advanced Target (20+ years)
Directional	Reduction in conversion rates per capita	No change in land conversion rates per capita	Net reduction in land conversion per capita
Prescriptive	Maximum 10% conversion for approved projects in the public interest (could be indexed to population growth rates)	No net conversion	5% reduction in land conversion per capita

Critical considerations to ensure these targets protect biodiversity:

- No ecosystem type should be permanently lost from your city,
- Priority protection goes to ecosystems most at risk (such as wetlands, riparian zones, and coastal areas), and
- Any unavoidable conversion must maintain or enhance overall ecosystem functionality.

Beneficial actions to reduce land conversion pressures:

- Establish protected land-use designations such as greenbelts, riparian buffers, and coastal protection zones to protect sensitive areas and reign in sprawl.
- Implement Transfer Development Rights schemes to allow development to shift away from sensitive sites to designated receiving sites such that nature is protected and enhanced.
- Encourage increased density and expand access to public transit, utilities, and amenities to reduce development pressure on peripheral ecosystems

These targets directly support Sustainable Development Goal (SDG) 15.1, which calls for the conservation, restoration, and sustainable use of terrestrial ecosystems, and SDG 11.3, which promotes sustainable urbanization and reduced per capita environmental impact of cities, by preventing further ecosystem degradation while ensuring any unavoidable development follows regenerative principles.

Nature Enhancement Targets

State of Natural Areas

Cities should progressively expand natural areas to create space for biodiversity, enhance ecosystem services, and improve urban resilience. This includes transforming underutilized spaces into green infrastructure, establishing green corridors, developing urban forests, and creating biodiverse parks. The target recognizes that urban contexts vary significantly—dense cities may focus on green roofs, vertical gardens, and pocket parks, while others may restore larger natural areas or expand existing green spaces.

This target directly supports multiple global frameworks. It aligns with GBF Target 12, which calls for significantly increasing the area, quality, connectivity, and access to green and blue spaces in urban areas. It also supports SDG 11.7, ensuring universal access to safe, inclusive, and accessible green and public spaces, particularly for vulnerable populations. The EU Biodiversity Strategy 2030 mandates that cities over 20,000 inhabitants develop Urban Greening Plans, including measures to create biodiverse and accessible urban forests, parks, and gardens. The New Urban Agenda emphasizes that well-planned urbanization can protect ecosystems and biodiversity while improving quality of life.

Implementation should prioritize multifunctional green spaces that deliver multiple ecosystem services simultaneously—supporting biodiversity, managing stormwater, reducing urban heat, improving air quality, and providing recreation. Cities should focus on native species plantings, create pollinator-friendly habitats, and ensure connectivity between green spaces to facilitate species movement and genetic exchange.

Table 18. Targets for Quality of Natural Areas

Target Type	Entry-level Target Example (first 5-10 years)	Intermediate Target (10-20 years)	Advanced Target (20+ years)
Directional	Zero ongoing degradation of sites, such as from industrial runoff. Reduction in forbidden activities in protected areas.	Increase in extent and quality of natural areas. Increase rates of restoration or protection.	
Prescriptive	Restore 30% of natural areas Achieve 20% protected areas	Restore 40% Protect 30%	Restore 60% Protect 40%

Critical considerations:

- Protected areas must represent all ecosystem types present in the city
- Priority expansion in areas serving underserved communities and ensure community access rights are maintained in protected areas
- All new natural areas must use native species and support local biodiversity
- Ensure genuine ecological function, not just aesthetic greening

Beneficial actions for natural areas:

- Remove invasive species and re-establish native plant communities
- Daylight buried streams and restore riparian corridors

- Create pollinator pathways linking fragmented habitats
- Decontaminate polluted soils using phytoremediation
- Establish community land trusts for permanent green space protection and community-managed conservation areas with local stewardship

The targets explicitly align with GBF Target 2 (restore 30% of degraded ecosystems) and the EU Nature Restoration Law, which requires member states to restore 30% of habitats in poor condition by 2030, increasing to 60% by 2040 and 90% by 2050. Priority should be given to ecosystems that are critically endangered or provide essential ecosystem services, such as wetlands for flood management or forests for air purification and carbon sequestration.

State of Biodiversity

The goal for biodiversity targets is continuous improvement toward ecologically balanced communities that support both common and rare species, maintain genetic diversity, and sustain ecological processes. Cities should work toward increasing native species populations while reducing threats from invasive species, pollution, and habitat fragmentation.

Cities should develop biodiversity action plans that identify priority species for conservation, including keystone species, umbrella species, and culturally significant species important to indigenous and local communities.

Habitat connectivity is essential for maintaining genetic diversity, enabling species migration in response to climate change, and supporting ecological processes like pollination and seed dispersal. Cities should map existing connectivity, identify critical linkages, and prioritize creating continuous corridors along rivers, through parks, and via street trees. Green infrastructure should be designed as an interconnected network rather than isolated patches, incorporating wildlife-friendly design in buildings and infrastructure.

Healthy soils support plant growth, filter water, store carbon, and harbor immense biodiversity. Urban soils often suffer from compaction, contamination, and loss of organic matter. Cities should implement soil protection policies.

Table 19. Targets for State of Biodiversity. Also refer to Box 17 in the detailed SBTN Cities Guidance for Local Governments for an illustration.

Target Type	Entry-level Target Example (first 5-10 years)	Intermediate Target (10-20 years)	Advanced Target (20+ years)
Directional	Halt decline in native species	Expand to increasing sightings of keystone species	Expand to increasing sightings of taxonomic categories or other groups
	Map and protect existing corridors	Create functional habitat network	Achieve full landscape permeability
Prescriptive	Enhanced connectivity measure by some % (depending on methods selected)	Improvements in quick-recovery species such as some insects and fish.	Ongoing measurement of species improvements.
	Target reduction in roadkill rates.		

Critical considerations:

- Focus on keystone, umbrella, and culturally significant species
- Address all taxonomic groups, not just charismatic megafauna
- Maintain genetic diversity within species populations
- Consider climate change impacts on species ranges and migration needs

Beneficial actions for biodiversity:

- Create species-specific habitat features (nesting sites, hibernacula, breeding ponds)
- Install wildlife crossings at identified collision hotspots
- Implement dark sky policies to protect nocturnal species
- Establish seed banks and ex-situ conservation for threatened local species
- Develop citizen science programs for biodiversity monitoring
- Halt new dams and install fish ladders and fish-friendly weirs and sloughs in streams
- Mandate soil health assessments in development projects, and promote practices like composting, reduced tillage, and organic amendments that rebuild soil ecosystems

This supports **GBF Target 4** (halt human-induced extinction and reduce extinction risk), **Target 6** (reduce invasive alien species introductions by 50%), and **Target 12** (ecological connectivity in urban areas). **SDG 15.5** calls for urgent action to halt biodiversity loss and protect threatened species. The EU Biodiversity Strategy 2030 aims to reverse biodiversity decline, with specific targets for pollinators, birds, and other species groups.

State of Ecosystem Services

Cities should progressively enhance nature's capacity to provide essential services while ensuring equitable access for all residents. Provisioning services like urban agriculture and water supply must balance consumption with sustainable capacity. Regulating services including climate regulation, flood control, and air purification require expanded vegetation and restored ecosystems. Cultural services must be accessible to all communities, respecting diverse relationships with nature.

The specific target will depend on which indicator(s) you select:

Table 20. Targets for Ecosystem Services. Refer to box 21 in the detailed SBTN Cities Guidance for Local Governments for an illustration.

Indicator	Target Type	Entry-level Target Example (first 5-10 years)	Intermediate Target (10-20 years)	Advanced Target (20+ years)
Access to Nature	Prescriptive	50% of population within 300m walking distance of quality green space	75% within 300m	100% within 300m
	Directional	Expand green cover in underserved wards; pilot neighborhood parks within walking distance.	Secure 10 m ² of public green space per capita across the city.	Maintain ≥15 m ² of accessible public green space per capita with equitable distribution.

Indicator	Target Type	Entry-level Target Example (first 5-10 years)	Intermediate Target (10-20 years)	Advanced Target (20+ years)
Agriculture	Prescriptive	Secure 5% of fresh produce from local urban/peri-urban agriculture under good management practices.	Achieve 15% of fresh produce supply from urban/peri-urban sources.	Ensure $\geq 25\%$ of fresh produce supply is met sustainably through local agriculture.
	Directional	Increase areas under good management practices	Integrate sustainable farming practices into 50% of urban agriculture projects.	Establish food sovereignty programs with significant reliance on local urban/peri-urban agriculture.
Freshwater and woodfuels consumption	Prescriptive	Achieve a 10% reduction in per capita freshwater consumption; reduce woodfuel reliance by 20%.	Achieve a 30% reduction in freshwater consumption per capita and 50% reduction in woodfuel use.	Achieve a 50% reduction in freshwater consumption and eliminate all unsustainable woodfuel use.
	Directional	Year-after-year reduction in consumption rates per capita	Maintain consumption within locally sustainable levels	Achieve closed-loop water systems
Sacred Sites	Prescriptive	Recognize and map sacred sites in city planning; initiate dialogues with communities.	Formalize protection for at least 50% of identified sacred sites in consultation with communities.	Ensure all sacred sites are recognized and integrated into land-use planning with cultural stewardship rights.
	Directional	Legally designate 25% of identified sacred sites for conservation and protection.	Legally protect 75% of identified sacred sites with active community management.	Achieve 100% protection of sacred sites, with community co-management legally mandated.

Critical considerations:

- Prioritize services in areas with greatest social vulnerability
- Ensure cultural relevance and welcome for all communities
- Stack multiple services in single spaces for efficiency
- Measure both supply and equitable access to services

Beneficial actions:

- Create community gardens and food forests in food deserts
- Install green infrastructure for stormwater management
- Expand urban forest canopy in heat-vulnerable neighborhoods
- Establish pollinator gardens along transportation corridors
- Develop therapeutic gardens near healthcare facilities
- Recognize and protect sacred natural sites and traditional use areas

These targets support multiple frameworks: [SDG 2.4](#) (sustainable food production), [SDG 6.4](#) and [6.6](#) (water efficiency and ecosystem protection), [SDG 11.7](#) (universal green space access), [SDG 13.1](#) (climate adaptation), and CBD Target 11 (ecosystem services for human wellbeing). The [EU Green Infrastructure Strategy](#) emphasizes multifunctional benefits. WHO recommends minimum green space standards for public health. The [New Urban Agenda](#) recognizes ecosystem services as fundamental to sustainable urbanization.

Ensuring Target Alignment

Your targets must work together synergistically. Expanding natural areas supports biodiversity, which enhances ecosystem services, while reducing conversion pressure enables all three improvements. Review your targets to confirm that achieving one supports rather than undermines others. Priority should go to ecosystems identified as vulnerable in Step 1, with more ambitious targets for areas at highest risk.

Connect your local targets to global frameworks to demonstrate contribution to international commitments. The [Convention on Biological Diversity's Global Biodiversity Framework](#), adopted by 196 countries in 2022, establishes global goals to halt biodiversity loss. Your city's targets can directly support Target 2 (restore 30% of degraded ecosystems by 2030), Target 3 (protect 30% of land and water by 2030, known as "30x30"), and Target 12 (increase urban green spaces and ensure equitable access). The [EU Nature Restoration Law](#), enacted in 2024, legally requires member states to restore degraded ecosystems progressively—20% by 2030, 60% by 2040, and 90% by 2050—making your targets essential for compliance if you're in Europe. The [UN Sustainable Development Goals \(SDGs\)](#) provide another critical framework, with your nature targets contributing to SDG 11 (Sustainable Cities and Communities), particularly target 11.7 on universal access to green spaces, SDG 15 (Life on Land) focusing on ecosystem protection and restoration, and SDG 13 (Climate Action) through nature-based solutions. The overarching [global nature-positive goal](#)—to halt and reverse nature loss by 2030 measured against a 2020 baseline—represents the biodiversity equivalent of the Paris Agreement's climate targets. By aligning your city's targets with these frameworks, you not only contribute to global efforts but also access international funding, join city networks for support and knowledge sharing, and demonstrate leadership in the global movement toward sustainable urban development.

Throughout target-setting, maintain focus on co-benefits—the multiple positive outcomes that arise when nature improvements simultaneously address environmental, social, and economic needs. Urban nature improvements typically deliver multiple benefits simultaneously—green infrastructure for flood control also provides cooling, air quality improvement, and recreation space. Recognizing and planning for these co-benefits strengthens the case for investment and builds broader stakeholder support

6. Next steps

With targets established, focus on implementation through four key action areas.

Future Iterations

This pilot guidance focuses on land use pressures as the most significant driver of urban biodiversity loss. Future iterations will address water use and pollution impacts on aquatic ecosystems, invasive species management in urban environments, climate change impacts on urban biodiversity, and resource extraction within city boundaries.

Call to Action

Cities must act now to reverse nature loss by 2030. By adopting these science-based targets, your city joins a global movement toward nature-positive urban development. The targets you set today determine the livability of your city tomorrow. Every year of delay makes achieving nature-positive cities more difficult and expensive.

For support and updates, contact SBTN [here](#).

7. Definitions

The following definitions were used in the development of this document.

Term	Definition
Biodiversity	Variability among living organisms, including diversity within species, between species, and of ecosystems
City	Contiguous built-up area with defined local government responsible for planning and resource management
Co-benefits	Additional positive outcomes beyond primary target (e.g., green spaces improving both biodiversity and air quality)
Degraded ecosystem	Ecosystem with reduced function, biodiversity, or services compared to natural state. Changes within a natural ecosystem that significantly and negatively affect its species composition, structure, and/or function and reduce the ecosystem's capacity to supply products, support biodiversity, and/or deliver ecosystem services. Degradation may be considered conversion if it is large-scale and progressive or enduring; alters ecosystem composition, structure, and function to the extent that regeneration to a previous state is unlikely; or leads to a change in land use (e.g., to agriculture or other use that is not a natural forest or other natural ecosystem). (Accountability Framework Initiative, SBTN)
DPSIR Framework	A causal framework for describing interactions between society and environment: Drivers (social/economic forces) create Pressures (direct stresses) that change the State (environmental condition), leading to Impacts (on human welfare/ecosystems), prompting Responses (policy actions). Used to structure environmental assessments and identify intervention points
Ecosystem services	Benefits nature provides to people, including provisioning (food, water), regulating (climate, floods), and cultural (recreation, spiritual) services
Land conversion	Change from natural ecosystem to non-ecosystem land use (urban, industrial, intensive agriculture)
Nature	The natural world, emphasizing the diversity of living organisms and their interactions with their environment
Pressure	Direct stress or impact on the environment caused by human activities, stemming from underlying driving forces (such as population growth or economic development) and resulting in changes to ecosystem conditions. Examples include pollution, resource extraction, and land-use change that directly affect environmental systems. This term originates from the DPSIR Framework.
Protected area	Legally protected, formally secured, or administratively protected natural areas
State	The current condition of the environment and its ecosystems at a given time, including physical, chemical, and biological characteristics. State indicators reveal how pressures have affected nature and whether ecosystems are degraded, stable, or improving. This term originates from the DPSIR Framework.

8. Illustrative Example: City Verdantia Step 1 Summary Profile

The following example illustrates how the fictive City Verdantia completes its Step 1 Summary Profile by synthesising findings across all four context elements.

1. Ecosystem Overview

Broad Ecosystem Group	Sub-types Present	Condition	Preliminary Indicator Focus
Terrestrial remnant ecosystems	Remnant forests	Relatively intact	Canopy cover, forest biodiversity, connectivity
Aquatic and riparian systems	Three wetlands; several canals	Wetlands: heavily degraded; Canals: moderately modified	Water quality, wetland-dependent species, flood-storage capacity
Highly artificial / sealed areas	Roads, plazas	Completely sealed (extensive)	Imperviousness, heat-island intensity, retrofit potential

Priority ecosystems for action: Degraded wetlands (restoration need); sealed surfaces in heat-stressed areas (NbS retrofit potential). Remnant forests warrant protection to maintain current condition.

2. Data and Methodological Capacity

Data / Method Type	Capacity Level	Notes
Geospatial data (GIS, satellite imagery, spatial plans)	Comprehensive	Staff trained in GIS; access to satellite imagery and spatial plans
Existing public datasets	Comprehensive	Can access and integrate effectively
Regional/national research (university partnerships)	Comprehensive	Strong collaboration with local university
Primary data collection (surveys, field campaigns)	Core	Limited survey design capacity; only small-scale, occasional field campaigns

Implication for indicator methodology: Indicators relying on spatial data (e.g., land-cover change, wetland extent, canopy cover, imperviousness) can use comprehensive methodologies. Indicators requiring intensive survey or field-based data (e.g., household vulnerability

assessments, fine-scale biodiversity sampling) should initially use core methods or proxy measures, with external support where needed.

3. Policy Context Summary

Scale	Policy / Plan	Nature Objectives	Relevant Ecosystems / Services	Existing Indicators / Data	Gaps or Conflicts
National	National Climate Policy	Promotes urban greening and cool roofs	Urban cooling; heat mitigation	None specified locally	No local canopy targets; no mandate to subnational level
Regional	Regional Climate Resilience Plan	Increase tree cover in dense neighbourhoods	Urban cooling; heat stress reduction	Identifies Verdantia as heat-stress hotspot	Recommendation only; no binding targets or monitoring requirements
City	City Climate Action Plan	Reduce heat stress through green infrastructure	Urban cooling	Number of trees planted	No spatial targeting; no equity dimension; no canopy cover or temperature tracking; no assigned departmental responsibility
City	(No biodiversity-specific policy)	—	Wetlands, remnant forests	—	No policy on wetland protection or restoration; no "no net loss" commitment; biodiversity not an explicit priority

Key policy gaps: No minimum canopy cover targets for high-risk or low-income districts; no department assigned responsibility for canopy or surface temperature monitoring; no policy framework for wetland protection or restoration; biodiversity absent from formal policy priorities.

Alignment opportunities: Urban cooling indicators can link upward to regional and national climate policy; wetland restoration can be framed as climate adaptation (flood storage) to leverage existing climate mandates.

4. Capacity to Act

Dimension	Rating	Justification
Technical	Emerging	Small group of staff with basic GIS and environmental skills; no dedicated ecology team; no systematic monitoring programmes; specialised assessments depend on externally funded projects.

Institutional	Emerging	Nature responsibilities fragmented across departments; no designated lead unit; biodiversity not an explicit policy priority; coordination ad hoc and project-based.
Financial	Emerging	No dedicated budget lines for biodiversity or NbS; expenditure predominantly reactive (post-flood, emergency works); funding dependent on sporadic donor-funded projects.

5. Implications for Step 2 (Indicator Selection) and Step 3 (Target-Setting)

Domain	Recommended Approach	Rationale
Indicator methodology	Use comprehensive methods for spatially derived indicators (canopy cover, imperviousness, wetland extent); use core methods for field/survey-dependent indicators (biodiversity sampling, household vulnerability)	Aligns with data capacity profile
Target type	Prescriptive targets feasible for spatial indicators with reliable baselines; directional targets for biodiversity and equity outcomes until monitoring systems mature	Technical capacity supports spatial baselines but not yet fine-grained ecological or social monitoring
Ambition level	Standard-level targets for priority areas (heat-stressed wards, degraded wetlands); directional targets elsewhere	Emerging institutional and financial capacity limits scope for intermediate or advanced commitments in current cycle
Priority focus areas	(1) Urban cooling in heat-stressed, low-income neighbourhoods; (2) Wetland restoration for flood storage	Aligns with existing policy hooks (climate resilience) and most degraded ecosystems

6. Capacity-Building Priorities for Future Cycles

Dimension	Priority Actions
Technical	Establish systematic canopy and wetland monitoring; train staff in ecological assessment; formalise university partnership for biodiversity data
Institutional	Designate a lead unit for urban nature; develop interdepartmental coordination mechanism; draft local biodiversity strategy
Financial	Secure dedicated budget line for NbS; develop investment case quantifying co-benefits (flood reduction, health, cooling); explore climate adaptation funding streams

9. Resources

List of frameworks and other resources referenced in this document.

Resource Name		Description and link
CBD	Convention on Biological Diversity	The CBD is an international treaty that aims to conserve biological diversity, ensure the sustainable use of its components, and share the benefits arising from genetic resources fairly. It provides the overarching global framework for biodiversity governance and reporting. https://www.cbd.int/doc/publications/cbd-ts-58-en.pdf
CSCAF	ClimateSmart Cities Assessment Framework 3.0	An Indian initiative by NIUA, CSCAF 3.0 offers a structured framework to help cities evaluate their climate resilience across five thematic areas: energy and green buildings, urban planning, mobility, air quality, and water https://niua.in/c-cube/sites/all/themes/zap/assets/pdf/CSCAF_3_0_Technical_document.pdf
CwN	Cities with Nature	A global platform (not fully public) that connects cities committed to enhancing urban nature and biodiversity. It provides tools, resources, and a community of practice for city practitioners and decision-makers to exchange knowledge on nature-based solutions and biodiversity planning https://citieswithnature.org/
DOPA	Digital Observatory for Protected Areas	DOPA, developed by the European Commission's Joint Research Centre, is an online platform providing data and indicators on biodiversity and ecosystems in protected areas worldwide. https://dopa.jrc.ec.europa.eu/dopa/
EUBI	European Urban Biodiversity Index	EUBI offers a standardized set of indicators for European cities to measure and report on their biodiversity performance. It aligns with EU policies and helps local authorities assess urban ecosystems, habitats, and species diversity. https://www.eionet.europa.eu/etcs/etc-bd/products/etc-bd-reports/eubi_cities_biodiversity_indicator
EUBS	EU Biodiversity Strategy	The EU Biodiversity Strategy 2030 sets ambitious targets to protect and restore Europe's biodiversity, including expanding protected areas, restoring degraded ecosystems, and integrating biodiversity considerations into all sectors. https://dopa.jrc.ec.europa.eu/kcbd/EUBDS2030-dashboard/?version=1
GBF	Global Biodiversity Framework	Adopted at COP15, the GBF provides global targets and goals for halting and reversing biodiversity loss by 2030. It builds on the CBD and guides countries, cities, and stakeholders to implement measurable actions for biodiversity conservation. https://www.cbd.int/gbf/targets/notes.shtml
GCA	Green City Accord	An EU initiative to support European cities in achieving cleaner air, water, nature, waste management, and noise reduction. The Accord provides an indicator-based framework and reporting system for local governments to track environmental progress. https://webgate.ec.europa.eu/declare/static/docs/Green_City_Accord_Indicators_Guidebook.pdf

Resource Name		Description and link
IEFS	International Ecocity Framework and Standards (IEFS) Initiative	A global framework for assessing and guiding cities toward becoming “ecocities.” It includes 18 standards under social, ecological, and economic dimensions, helping cities align with sustainable urban development goals. https://ecocitystandards.org/
InVEST	Integrated Valuation of Ecosystems and Tradeoffs	InVEST is an open-source software suite developed by the Natural Capital Project. It enables mapping and modeling of ecosystem services, such as water supply, carbon storage, and habitat quality, to inform land-use and policy decisions. https://naturalcapitalproject.stanford.edu/software/invest
ISO	International Organization for Standardization	ISO develops international standards across sectors, including urban sustainability, environmental management, and biodiversity. ISO standards (such as ISO 37120 on city indicators) provide globally recognized frameworks for cities to assess sustainability performance. https://www.iso.org/home.html
SBT	Science Based Targets	The Science Based Targets Network provides methodologies and guidance for organizations and cities to set measurable targets for biodiversity, freshwater, climate, and land use. It aligns science with practical action pathways for nature-positive outcomes. https://sciencebasedtargetsnetwork.org/wp-content/uploads/2024/07/Technical-Guidance-2024-Step1-Assess-v1-1.pdf
CBI	Singapore’s City Biodiversity Index	This is a self-assessment tool that helps cities evaluate and monitor their biodiversity efforts using 23 indicators. It was developed by Singapore in collaboration with the CBD to enable cities worldwide to benchmark progress. https://www.cbd.int/doc/publications/cbd-ts-98-en.pdf
UMF	Urban Monitoring Framework	Developed by UN-Habitat, the UMF provides a global framework for monitoring urban development in line with the SDGs. It offers indicators across dimensions like governance, productivity, equity, environment, and infrastructure. https://data.unhabitat.org/pages/urban-monitoring-framework
UNI	Urban Nature Indexes	The UNI is a standardized framework created by IUCN to help cities measure and report their impact and dependencies on nature. It aligns with the Global Biodiversity Framework and supports integration of urban biodiversity into global reporting. https://portals.iucn.org/library/sites/library/files/documents/2023-015-En.pdf
USF	Urban Sustainability Framework	The USF provides cities with a structured approach to sustainability planning. It emphasizes governance, financial planning, and technical pathways, guiding cities toward sustainable growth that balances economic, environmental, and social needs. https://documents1.worldbank.org/curated/en/339851517836894370/pdf/123149-Urban-Sustainability-Framework.pdf

