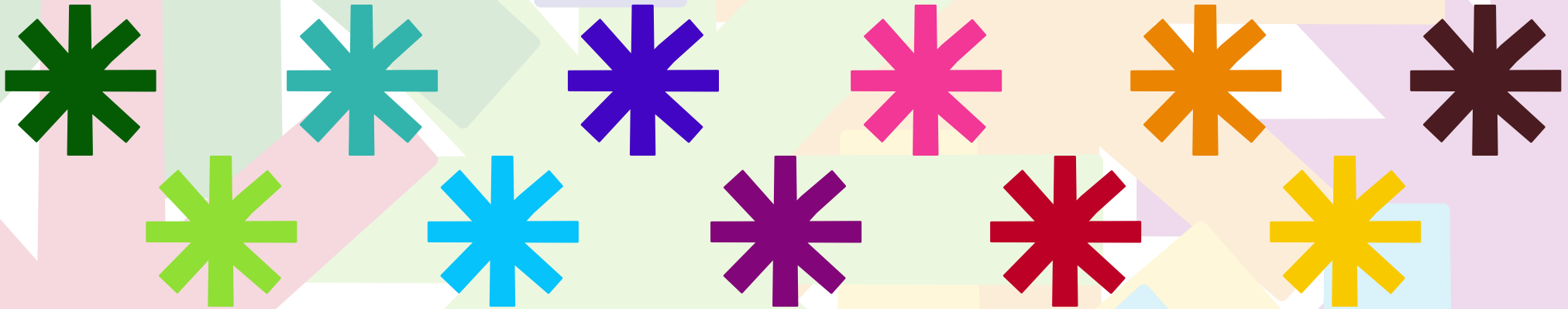
SVMA Catalog of Nature-based Solutions

Strategies to strengthen biodiversity and ecosystem services



CITY HALL OF SÃO PAULO

Secretariat of Green and Environment - SVMA
São Paulo, 2025

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TERRITORIAL

18 Park
20 Conservation Unit
22 Square
24 Ecological, green or pollinator corridors
26 Mini parks
28 Biodiverse agriculture
30 Biodiverse orchard

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36 Control of invasive exotic species
38 Planting of rare or threatened species
40 Diversification of vegetation strata
42 Planting according to the phytophysiognomy of the site
44 Planting of different species in the strata
46 Planting of flowers
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52 Enrichment of anthropized areas

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Against a backdrop of extreme weather events and high biodiversity loss, Nature-based Solutions (NbS) can help cities with the necessary adaptation and restoration.

Thus, the Secretariat of Green and Environment (SVMA) of the Municipality of São Paulo (MSP) prepared the 'NbS Catalog: strategies to strengthen biodiversity and ecosystem services' as a practical tool to disseminate technical knowledge about biodiversity and the urban enviromental system.

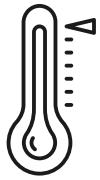
It is a tool to inspire and engage various actors in the promotion of biodiversity and was designed for application in the most diverse situations and scales.

With a simple and direct language, it serves both for those who want to create a small garden and for those who plan large interventions, being an invitation to the various actors to change the way of producing the city.

What are the NbS in this catalog?

Nature-based solutions - NbS are solutions inspired by and based directly on natural processes, aiming to reproduce how Nature behaves in order to face environmental, social and economic challenges.

Benefits of Adopting NbS



Climate adaptation



Increase of biodiversity



Health improvement

To Strengthen the biodiversity and the ecosystems services, the flora and fauna has an strategic importance. In case of flora, it is crucial to pay attention to the following principles:

- **planting native species from the municipality:** it is essential to plant as many native species from the Sao Paulo municipality as possible, in a diversified manner. This includes the use of different species, covering different strata (layers) and habits (forms).

- control of invasive species: ideally, invasive species should never be planted, and existing invasive species should be managed to ensure the integrity of the native forest.

Due to the importance of these principles, the following highlighted reminder will appear on some NbS cards:

Important: flora

- plant as many native species from the municipality as possible
- diversify the vegetation
- never plant invasive species

Premises...

The **Atlantic Forest** is the predominant biome in the municipality of São Paulo (MSP). It is an exuberant and varied forest and has a rich biodiversity.

There are also **Cerrado** enclaves in the region, which feature grassland plant formations and a biodiversity adapted to open environments.



In case of wild fauna it is necessary to build or keep enviromentals that provide the required conditions to the animal survival. For that, we need to ensure:

Premises...



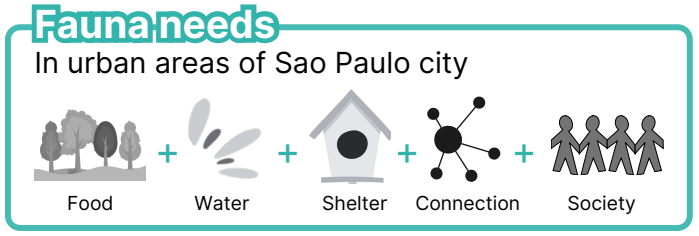
Food Offer
Planting native species is essential to provide food for wildlife, such as fruits, seeds, nectar, and leaves. Flora diversity is fundamental, as it ensures that different species have food available at different times of the year.

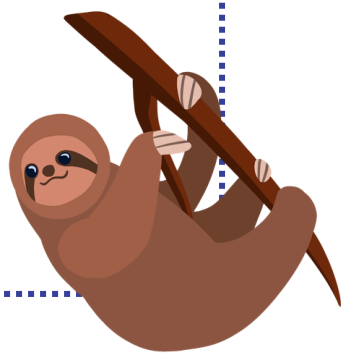
Water availability
It is important to keep natural water bodies (rivers, streams and springs) preserved and recover them when necesssary. In places where natural water access is restricted, the creation of artificial water structures like drinking fountains it is an excellent option.

Shelter and reproduction locals
Forest fragments are the best refuges for wild fauna. Other safe elements include trees with dense canopies, shrubs, and herbaceous strata.

Continuity and connectivity
It is essential to create a network of corridors and greenways (even small ones) for fauna movement. Without connectivity, isolated green areas make the fauna vulnerable to decline and local extinction.

Commitment of society
It's up to us, citzens, to respect, care and coexist with fauna. It is necessary to contain sources of pollution, prevent accidents, manage waste correctly, and control the use of pesticides that threaten wildlife.
Below there is a visual reminder of these principles used in some NbS cards:

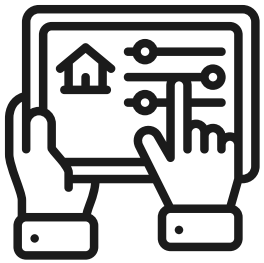




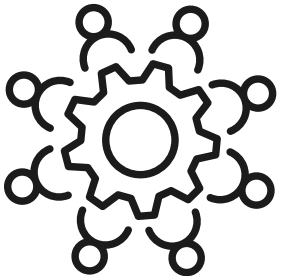
What we will need?



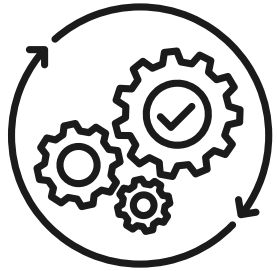
NbS adaptation with the existing city



Monitoring, adjustments and maintenance of NbS



Community engagement



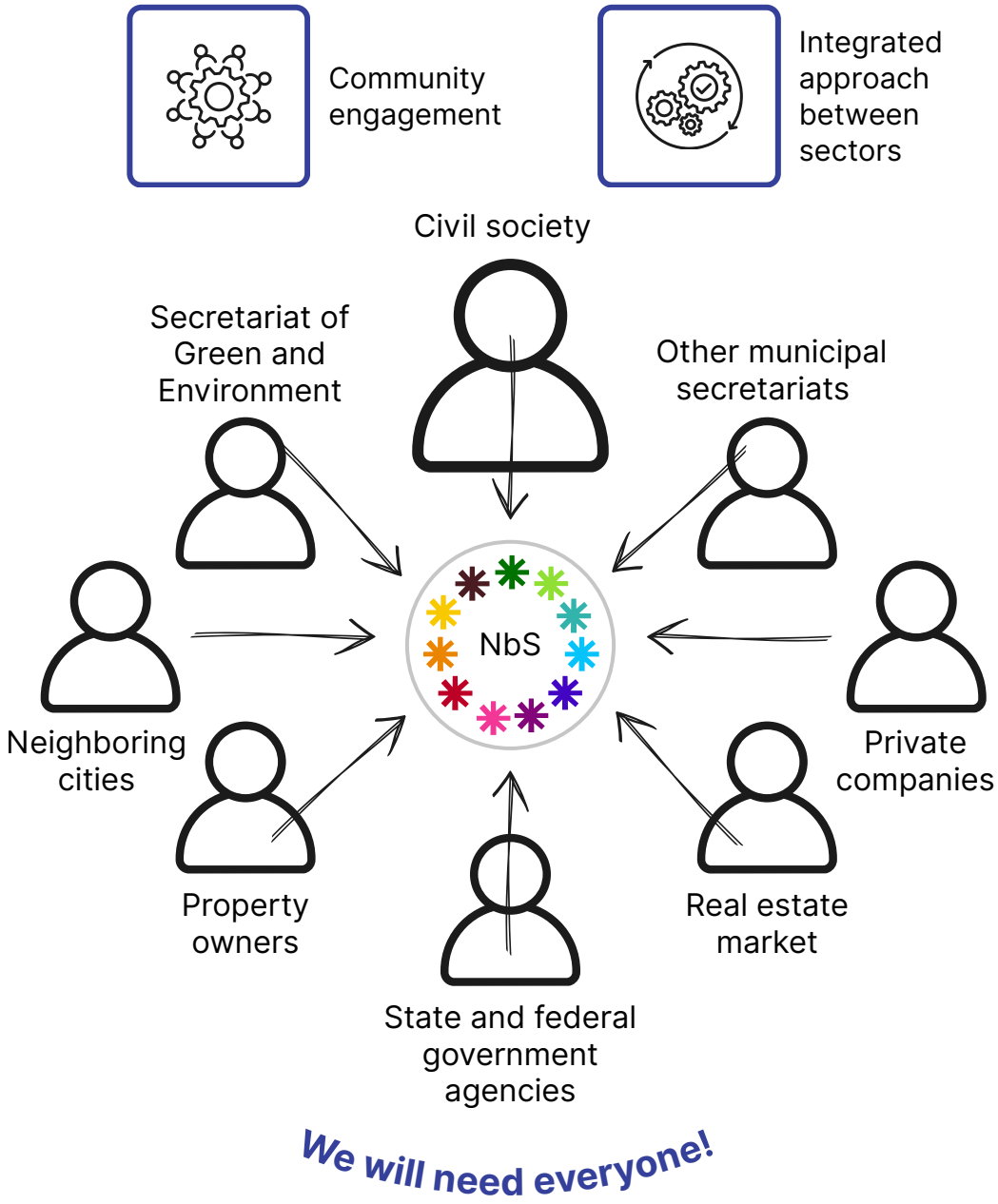
Integrated approach between sectors

Nature based Solutions (NbS) are living systems with their own dynamics, which have yet to be fully tested.
Therefore, for a good performance, it is necessary to monitor them, make adjustments, and adaptations according to local conditions and over time. Community participation and integration between sectors is vital to the success of this mission!

Importance and objectives of NbS Catalog
We need to find oportunities to keep and expand the Nature in the city, and the NbS presented in this Catalog are strategies for it.

For whom and why
The intention is to expand the iniciatives of NbS implementation to various urban agents, such as:
- Municipal Secretariats;
- State and federal government agencies;
- Private sector (companies, real estate market);
- Civil society (institutions, property owners, and residents)

Impact and aplications
The Catalog works as a basis for public policies, environmental planning and sustaintability actions.
It presents from simple to complex solutions, adjusting to different objectives, aiming to guide the actions of various actors in direction to a more sustainable, resilient, and pleasant city for everyone.
The vast implementation it is a crucial step to the sustentability of São Paulo city.

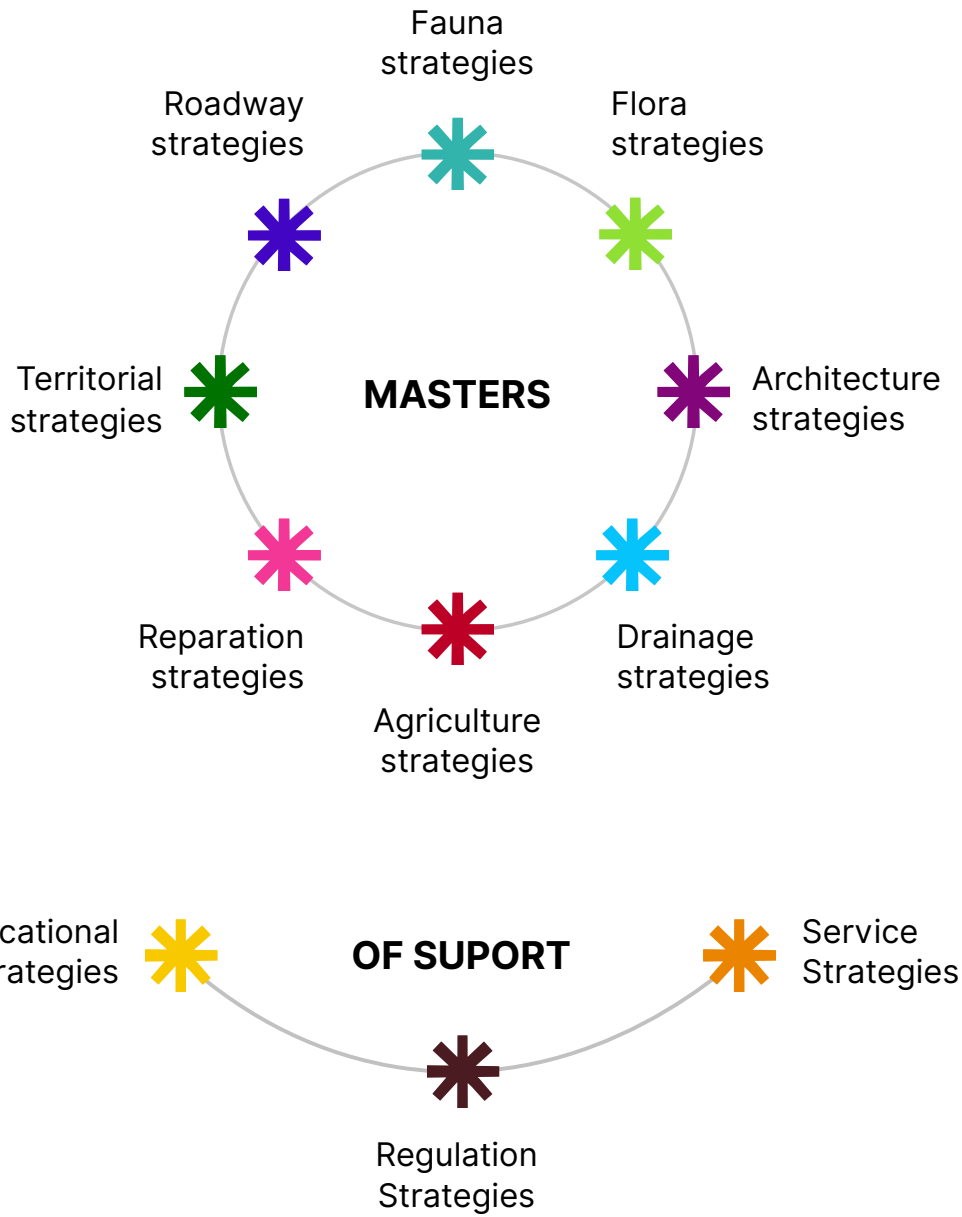


Structure and Purpose of the NbS Catalog

The Catalog aims to spark interest and provide straightforward ideas for quick and practical use.

For convenience, it is organized into separate cards for each solution, grouped by the strategies shown on the right.

Once printed, the cards can be handled and selected as desired.



The strategies:

The strategies are divided into 11 groups, comprising 8 groups of 'master' strategies (which really simulate nature) and 3 groups of 'support' strategies (which support the green transition).

The cards in the Catalog

Each card brings a name, a code end a intuitive photo or image, offering a immediate vision of the proposed solution. Some cards expand the content in the backside, showing pratical tips to potentialize the benefits to biodiversity.

In each NbS card we find the following:

NbS code: symbol of the strategy group + acronym of the NbS to be used in specific mapping

NbS name

Reminder about fauna

Explaining figures

Complementary references about the topic

Image(s) illustrating the NbS

Reminder about flora

Image reference



NbS in the map

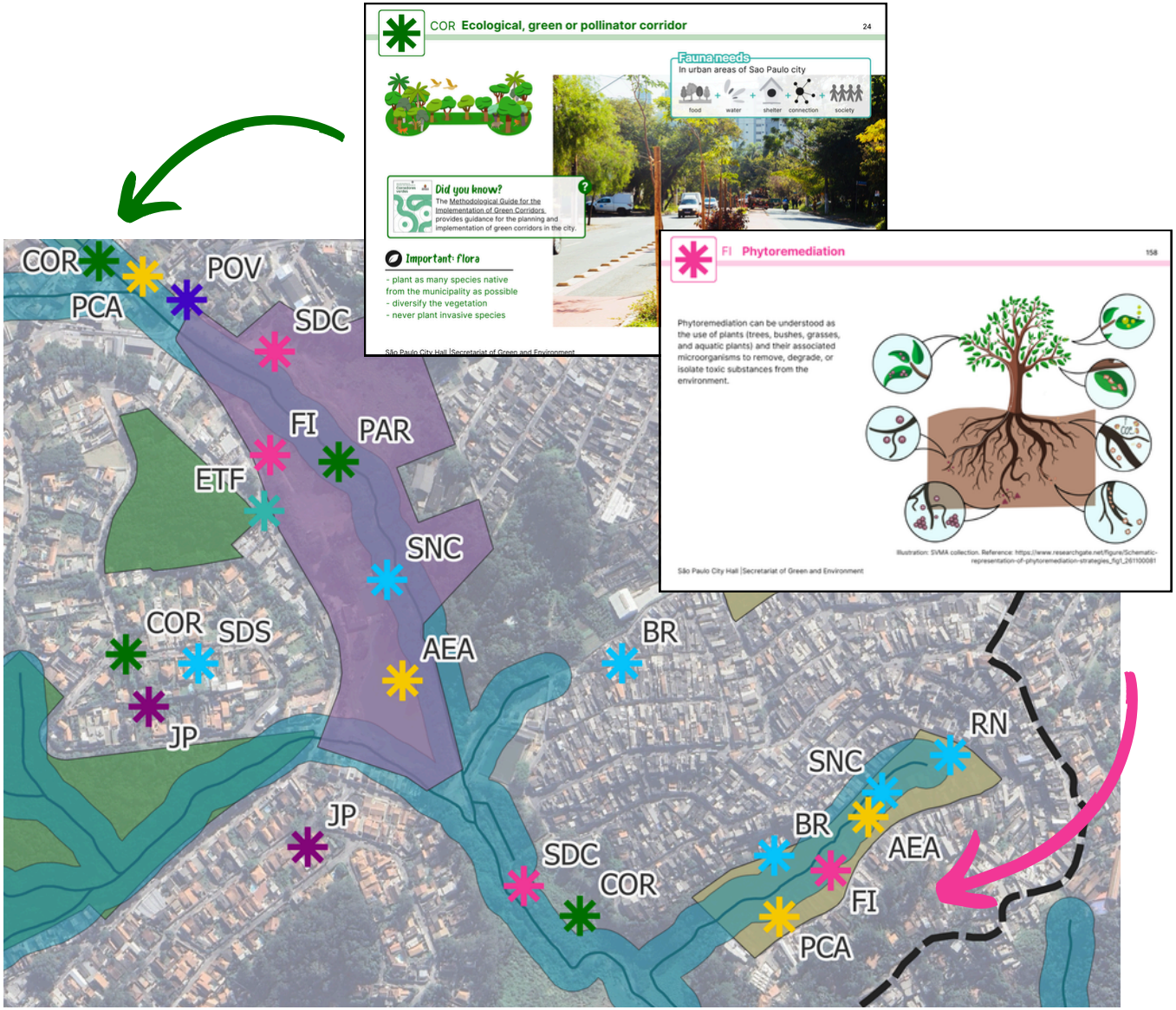
The NbS code (symbol and acronym) was created for mapping in plans and projects.

So, on the maps, as shown on the right, we can see:

- where the NbS can be implemented in the territorry
- the selected strategies
- the cards on what you want to achieve

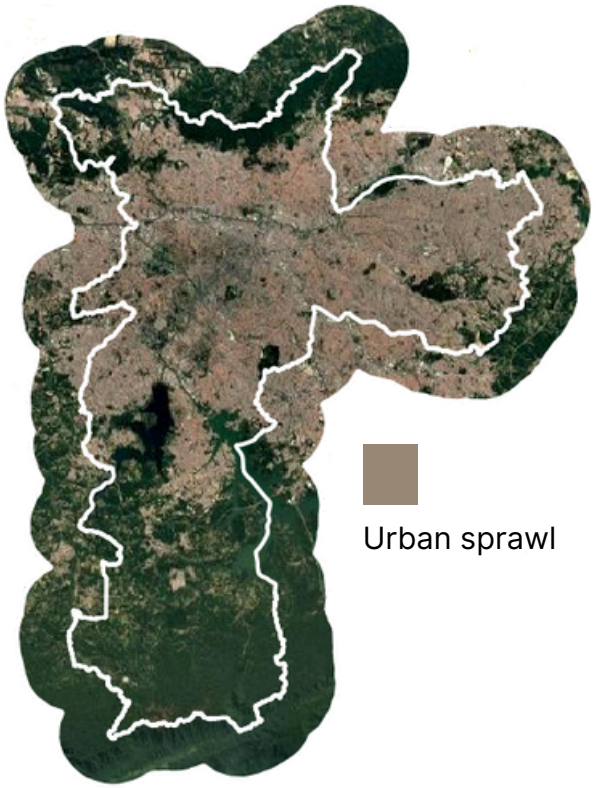
NbS in the territory

All NbS are important and the combination of them in the territory will make the difference!



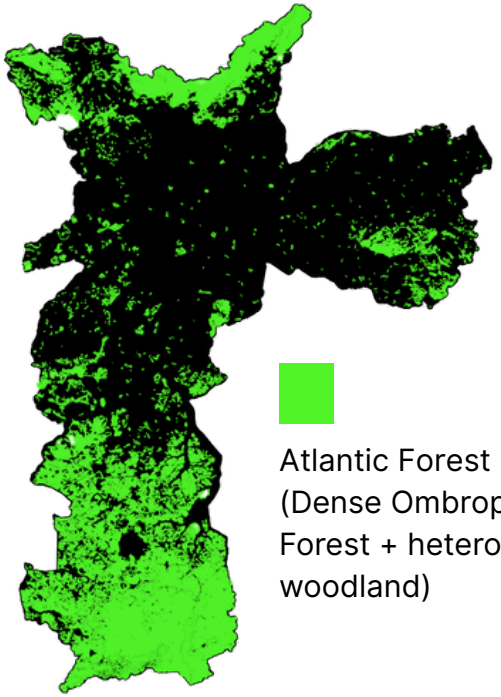
Location of NbS in Guavirituba watershed. Map: SVMA (CPA) collection

In the built-up areas of the city, it is urgent to create opportunities for Nature's return!
To achieve this, it is essential that the following actions be taken:
- **Conserve** existing green areas;
- **Restore and create new green area**s.



Urban sprawl

Where forests still exist, we cannot allow any more loss!
Therefore, the top priority is clear:
- **Conserve** the green areas
- **Protect** what already exist
- **Reduce** all the threats.



Atlantic Forest (Dense Ombrophilous Forest + heterogeneous woodland)

Greening SP!

Diverse solutions
Green plans in SP



Access the SVMA Virtual Library

Preservation is a priority

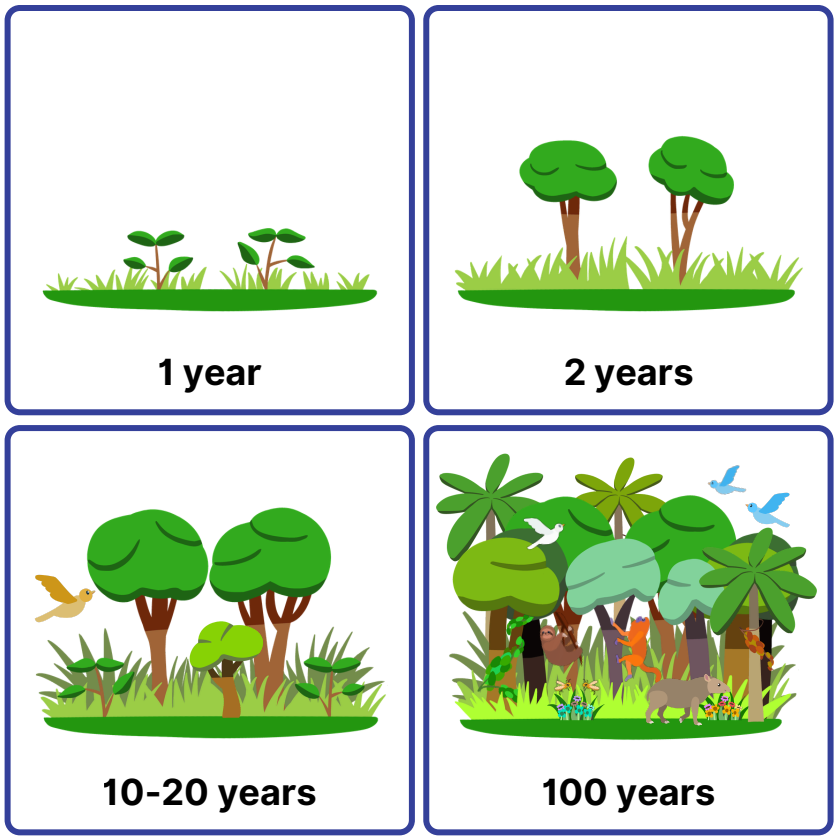
because starting over takes time...

When we remove a forest, woodland or field area, it eliminates the habitat of diverse species.

A new planting demands many years to restabilish the environmental function and the ecosystem services that the old vegetation offered.

Have a green area in your lot is a bennefit and should be treated in the project as an oportunity. Preserve it!

The suspention of vegetation must be the last option!



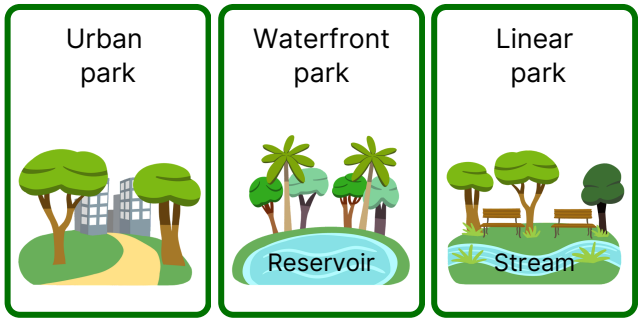


TERRITORIAL STRATEGIES

18 Park
20 Conservation Unit
22 Square
24 Ecological, green or pollinator corridor
26 Mini park
28 Biodiverse agriculture
30 Biodiverse orchard

CITY HALL OF SÃO PAULO

We have in Sao Paulo:

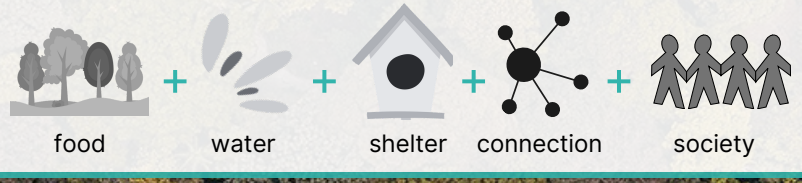


Important: flora

- plant as many species native from the municipality as possible
- diversify the vegetation
- never plant invasive species

Fauna needs

In the urban areas of the São Paulo city



Aerial view of Trianon Park. Photo: SVMA (DFS) collection - Daniel Messias

We have in Sao Paulo:

Full Protection: Wildlife Refuge, Biological Reserve, Natural Monument, Natural Park

Sustainable Use: Environmental Protection Area, Private Natural Heritage Reserve, Area of Ecological Interest, Municipal Forest, Urban Forest

Important: flora

- plant as many species native from the municipality as possible
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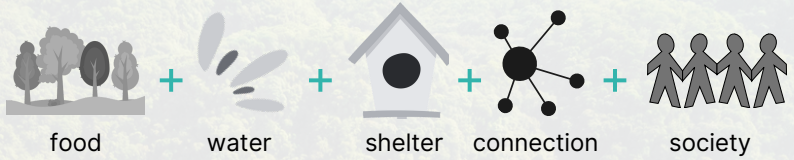
Fauna needs

In the urban areas of the São Paulo city



Aerial view of the Capivari-Monos Environmental Protection Area. Photo: SVMA collection



It is important to ensure the environmental and recreational functions of squares through the diversification of spaces, balancing:

- vegetation
- leisure facility
- urban furniture
- sunny areas and shaded areas

Important: flora

- plant as many species native from the municipality as possible
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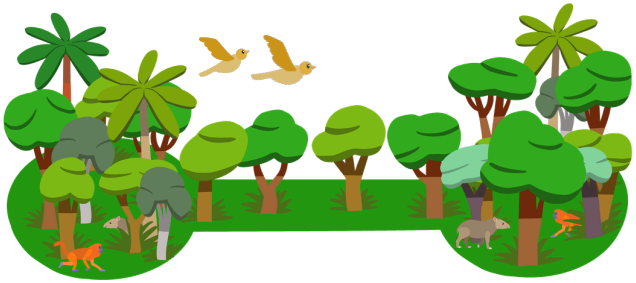
Rotary Square and Victor Civita Square. Photo: SVMA collection (CPA-G)

COR Ecological, green or pollinator corridor



Fauna needs

In urban areas of Sao Paulo city

food + water + shelter + connection + society





Did you know?

The Methodological Guide for the Implementation of Green Corridors provides guidance for the planning and implementation of green corridors in the city.

Important: flora

- plant as many species native from the municipality as possible
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Butantã green corridor. Photo: SVMA collection



Compact areas of unused urban lots and remaining public areas.

Important: flora

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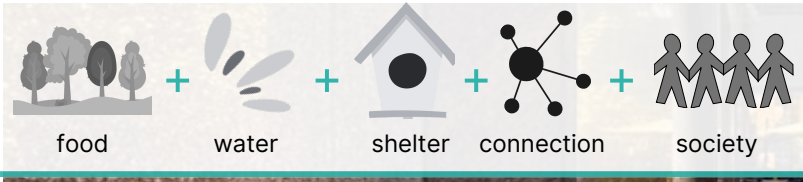
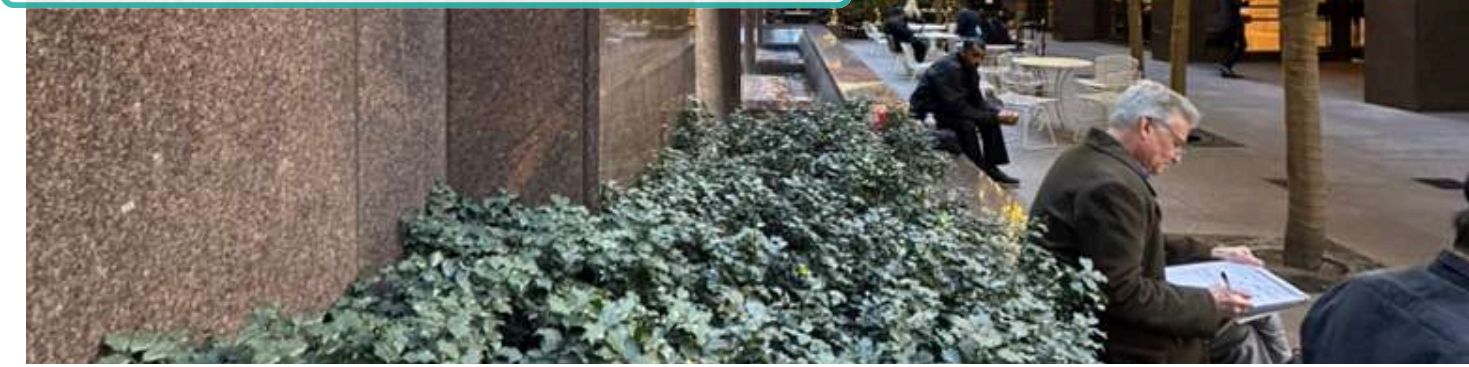
Fauna needs

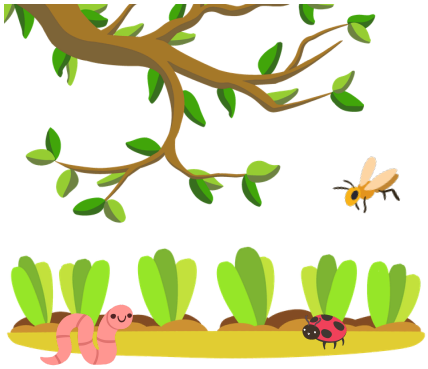
In the urban areas of the São Paulo city







1 - Paley Park, New York. Photo: Tania Pereyra
2 - Mini park in Pinheiros, São Paulo. Photo: Eduardo César



Includes:
- production units
- community and institutional gardens
- traditional crops

Important: flora

- plant as many species native from the municipality as possible
- diversify the vegetation
- never plant invasive species

Remember:

- ensure diversity of vegetables, fruits, aromatic herbs, and medicinal plants, prioritizing native species such as “PANCS”
- combine “companion plants,” which benefit each other
- prioritize fertilizers and natural methods for pest and disease control



CEPEUSP Agroecological Garden.
Photo: SVMA collection (UMAPAZ)

Did you know?



The guide **Native Species of Flora in the Municipality of Sao Paulo** lists the native species of the MSP, their phytophysiognomies, habits, frequency, rarity, and threat of extinction.

10 NATIVE SPECIES OF UNCONVENTIONAL EDIBLE PLANTS - PANCS



Acmella ciliata
(jambú)



Bromelia antiacantha
(abacaxi vermelho)



Ocimum carnosum
(alfavaca anis)



Pereskia acculeata
(ora-pro-nobis)



Rubus brasiliensis
(amora silvestre)



Piper umbellatum
(pariparoba)



Leandra australis
(pixirica)



Talinum fruticosum
(major gomes)



Solanum diploconos
(tomate do mato)



Anredera cordifolia
(bertalha coração)

Photos: SVMA collection (DPHM)



A biodiverse orchard has more fertile soil and is more resilient to pests and climate change.

Important: flora

- plant as many species native from the municipality as possible
- diversify the vegetation
- never plant invasive species

Remember:

- combine fruit trees with plants that repel pests or attract natural predators
- vary the types of fruits to attract different pollinators and animals



Urban orchard in Perus District. Photo: https://prefeitura.sp.gov.br/web/perus/w/noticias/134921

10 EDIBLE NATIVE FRUIT SPECIES



Did you know?

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Passiflora capsularis L.
(maracujá)



Eugenia uniflora L.
(pitangueira)



Eugenia involucrata DC.
(cerejeira-do-rio-grande, cereja-do-mato)



Psidium guineense Sw.
(araçá-do-campo)



Rubus brasiliensis Mart.
(amora-branca)



Hymenaea courbaril L.
(jatobá)



Garcinia gardneriana
(bacupari)



Campomanesia phaea
(cambuci)



Eugenia pyriformis
(uvaia)



Psidium myrtoides
(araça)

Photos: SVMA collection (DPHM)

FLORA STRATEGIES

34 Planting of native species of the municipality
36 Control of invasive exotic species
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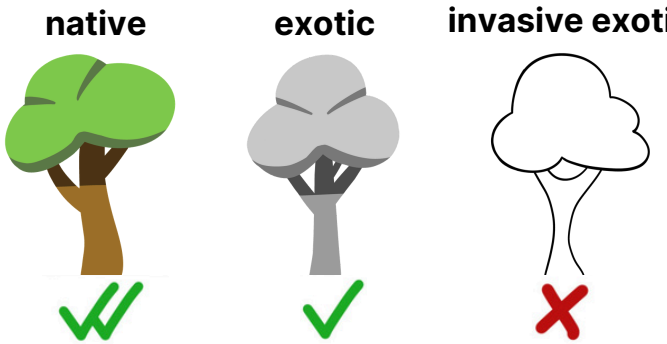
48 Biodiverse slope
50 Uncleared flowerbeds
52 Enrichment of anthropized areas

CITY HALL OF SÃO PAULO

Native species provide habitat and food for native animals, enhance the identity of the local flora, and contribute to climate regulation.
The Atlantic Forest manifests itself differently depending on its location, so it is important to choose species native to the municipality.



Ordinance on native tree species of the MSP
Ordinance on native vascular flora of the MSP



Planting with SECLIMA in the northern zone. Photo: SVMA collection



Butantã green corridor (collective planting). Photo: SVMA collection

Important: flora

- plant as many species native from the municipality as possible
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Did you know?

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10 NATIVE SPECIES THAT ARE AFFORDABLE AND EASY TO FIND



Euterpe edulis
(jussara)



Pyrostegia venusta
(cipó-de-são-joão)



Cedreala fissilis
(cedro)



Cecropia glaziovii
(embauba-vermelha)



Pleroma pulchra
(manacá-da-serra)



Jacaranda puberula
(jacarandá)



Thaumatophyllum bipinnatifidum
(costela-de-adão)



Cassia ferruginea
(chuva-de-ouro)



Erythrina speciosa
(suinã)



Pseudobombax grandiflorum
(embiruçu)

Photos: SVMA collection (DPHM)

Invasive exotic species are among the biggest causes of biodiversity loss on the planet. They adapt to the region's climate and can dominate the environment, to the detriment of native species.

They can be dispersed by birds or wind and thus accidentally introduced into other green areas (adapted from the Wildlife Friendly City Manual, p. 70).

Ordinances regarding invasive alien species

Important: flora

- plant as many species native from the municipality as possible
- diversify the vegetation
- never plant invasive species





1 - Invasive exotic specie Seafórtia control at the Harry Blossfeld Nursery. 2 - Expansion of the invasive exotic specie Lírio do Brejo in the Bororé National Park. Photos: SVMA collection (DPHM)

10 MOST COMMON INVASIVE SPECIES THAT SHOULD NOT BE PLANTED



Melinis minutiflora
(capim-gordura)



Hedychium ssp.
(lírio do brejo) - todas as espécies



Syngonium podophyllum
(singônio)



Tradescantia zebrina
(lambari)



Pilea cadierei
(alumínio)



Urochloa brizantha
(braquiarão)



Leucaena leucocephala
(leucena)



Archontophoenix cunninghamiana (seafórtia)



Pittosporum undulatum



Impatiens walleriana
(maria-sem-vergonha)

Photos: SVMA collection (DPHM)

Planting rare or endangered species

Rare or endangered species often possess unique genetic diversity that is important for ecosystem resilience, and their extinction can lead to the loss of essential ecosystem services.

MMA Ordinance on endangered species

SMA Ordinance on endangered species



Did you know?

The guide **Native Species of Flora in the Municipality of Sao Paulo** lists the native species of the MSP, their phytophysiognomies, habits, frequency, rarity, and threat of extinction.



Planting at the Harry Blossfeld Nursery. Photo: SVMA collection (DPHM)

10 RARE OR ENDANGERED SPECIES WE WOULD LIKE TO PROMOTE



Copaifera trapezifolia
(copaiba-da-mata-atlântica)



Nectandra barbellata
(canela-amarela)



Myrceugenia hamoniana



Myrcia flagellaris



Dicksonia sellowiana
(samambaiaçu)



Cedrela fissilis
(cedro)



Euterpe edulis
(juçara)



Escallonia chlorophylla

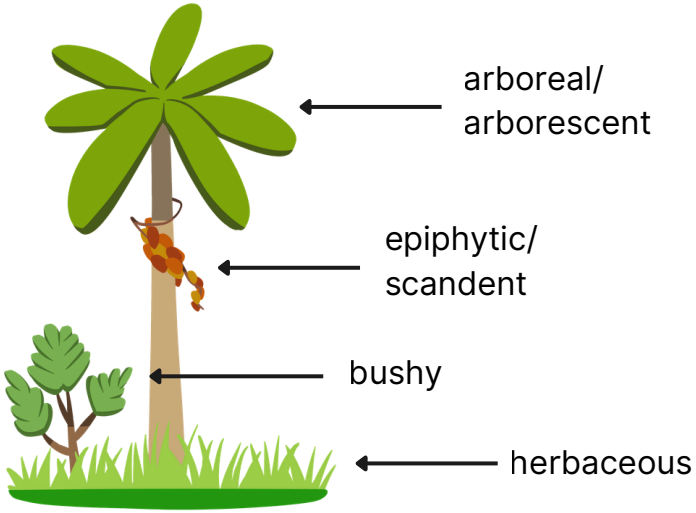


Plinia silvestris



Paspalum usterii

Photos: SVMA collection (DPHM)



Contemplate the four plant strata:
- arboreal/arborescent,
- epiphytic/scandent,
- bushy,
- herbaceous

Stratification refers to the vertical distribution of plants and it is important for structuring ecological habitats and fauna biodiversity.



Did you know?

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A plot of seedbeds in the Arthur Etzel Nursery, with various plant strata. Photo: SVMA collection (DPHM)

EXAMPLES OF THE 4 STRATA

Arboreal/arborescent

Erythrina falcata (mulungu)



Syagrus romanzoffiana (jerivá)



Cyathea delgadii (samambaiuçu)



Epiphytic/scandent

Vriesea carinata (bromélia)



Bifrenaria aureofulva



Pyrostegia venusta (cipó-de-são-joão)



Bushy

Campovassouria cruciata



Byrsonima intermedia (murici)



Herbaceous

Verbena rigida (verbena)



Evolvulus pusillus (gota-de-orvalho)



Photos: SVMA collection (DPHM)

Forms of each strata

In the guide 'Native Species of MSP Flora'



Arbusto	Feto arborescente	Dracenoide
Árvore	Palmeira	Epífita
Bambu	Trepadeira	Erva

In Sao Paulo, we find the following phytophysiognomies (vegetation typical of a region):

- Cerrado: fields of savanna, floodplain fields, high mountain fields, and marshes

- Atlantic Forest: native forest formations (dense rainforest) including floodplain forests and high-mountain forests (cloud forests)



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Photos: SVMA collection (DPHM)

Important: flora

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- diversify the vegetation
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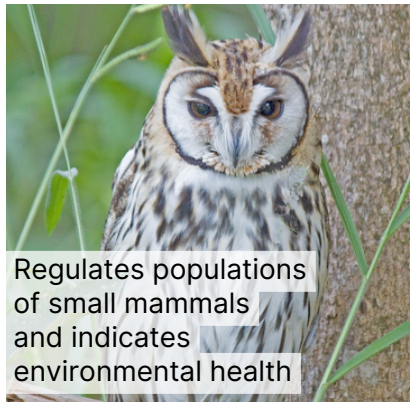
5 CERRADO ANIMALS AND 5 FOREST ANIMALS AND THEIR ECOLOGICAL FUNCTIONS

Cerrado



Colaptes campestris
(pica-pau-do-campo)



Asio clamator
(coruja-orelhuda)



Cariama cristata
(seriema)



Athene cunicularia
(coruja-buraqueira)



Cerdocyon thous
(cachorro-do-mato)

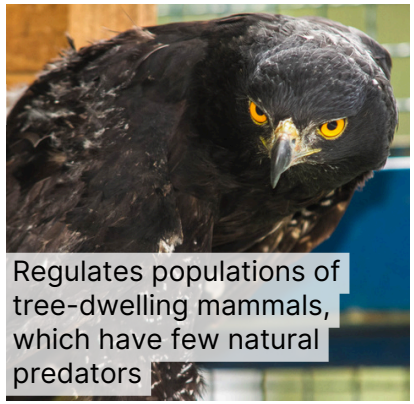
Forest



Echinanthera cyanopleura
(cobra-cipó)



Tapirus terrestris
(anta)



Spizaetus tyrannus
(gavião-pega-macaco)



Enyalius perditus
(camaleão)

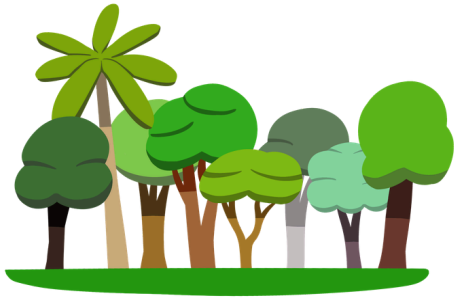


Ramphastus dicolorus
(tucano-de-bico-verde)

Photos: SVMA collection (DFS and ASCOM)

Remember:

Contemplate different species, sizes, flowering and fruiting seasons distributed throughout the year in each vegetation strata.



This strategy attracts fauna, guarantees food, and provides habitat for its diversification.

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The diagram shows heterogeneous planting (desirable) on the left and homogeneous planting on the right (undesirable).
Illustration: SVMA collection

EXAMPLES OF FAUNA IN THE FOUR STRATA

Arboreal/arborescent

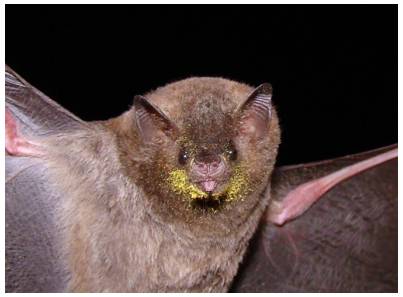
Bradypus variegatus (preguiça-comum)



Pyroderus scutatus (pavó)



Glossophaga soricina (morcego-beija-flor)



Epiphytic/scandent

Ramphastos toco (tucanoçu)



Sittasomus gresicapilus (arapaçu-verde)



Euphonia chlorotica (fim-fim)



Bushy

Arundinicola leucocephala (freirinha)



.Euglossa sp. (abelha-da-orquídea)



Phaethornis petrei (rabo-branco-acanelado)



Herbaceous

Heliconius sara (borboleta sara)



Cavia fulgida (preá)



Sicalis flaveola (canário-da-terra)

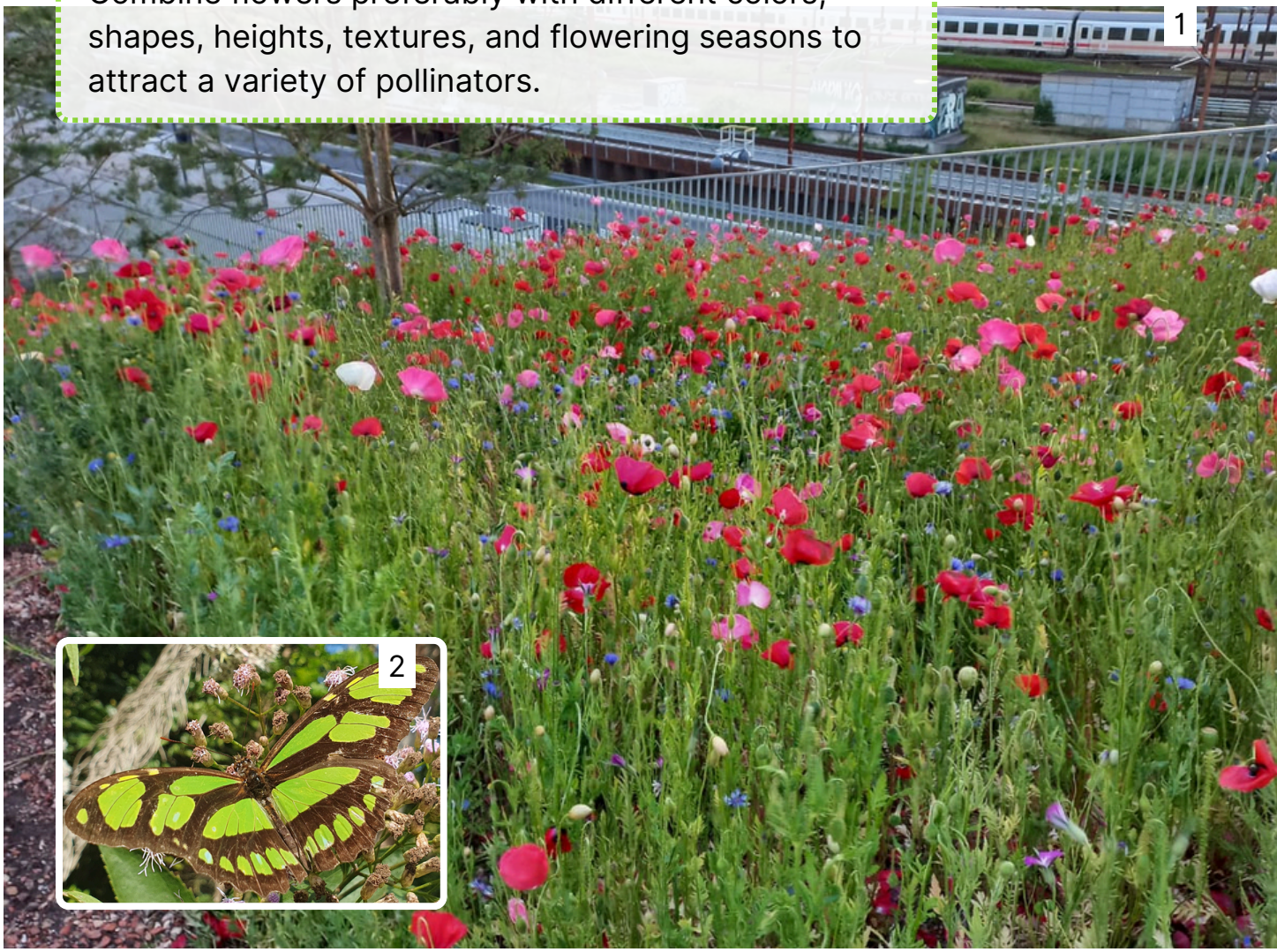


Photos: SVMA collection (DFS) and Wilson Uieda (morcego-beija-flor)

It contributes to increasing local biodiversity and aesthetics, serves as a habitat for pollinators, produces oxygen, and absorbs pollution.

Remember:

Combine flowers preferably with different colors, shapes, heights, textures, and flowering seasons to attract a variety of pollinators.



Important: flora

- plant as many species native from the municipality as possible
- diversify the vegetation
- never plant invasive species

1 - Biodiverse flowerbed in building landscaping, in Copenhagen, Denmark. Photo: SVMA collection (CPA-G)
2 - Borboleta-malaquita. Photo: SVMA collection

10 EASY-TO-FIND AND AFFORDABLE NATIVE FLOWERS



Did you know?

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Sphagneticola trilobata
(vedélia)



Justicia carnea
(justicia)



Casearia sylvestris
(guaçatonga)



Verbena rigida



Cassia ferruginea
(cassia)



Vochysia tucanorum



Jacaranda macrantha
(caroba)



Lantana trifolia
(lantana)



Ipomea cairica



Gomesa flexuosa
(pingo-de-ouro)

Photos: SVMA collection (DPHM)



Did you know?

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Biodiverse slope in Shangrilá Park. Photo: SVMA collection

10 SPECIES THAT CAN BE PLANTED ON SLOPES AND ATTRACT POLLINATORS



Imperata brasiliensis
(sapê)



Byrsonima intermedia
(murici)



Aristida jubata
(barba-de-bode)



Andropogon selloanus
(capim-pluma)



Verbeba rigida
(verbena)



Rubus brasiliensis
(amora-branca)



Myrciaria delicatula
(cambui)



Chaetogastra herbacea
(quaresmeirinha)



Mimosa daleoides
(mimosa)



Asclepias curassavica
(oficial-de-sala)

Photos: SVMA collection (DPHM)



Longer grass left uncut has more flowers and tall plants.
This increases the variety of food for different pollinators and provides shelter and nesting sites for invertebrates.

Important: flora

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- diversify the vegetation
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Did you know?

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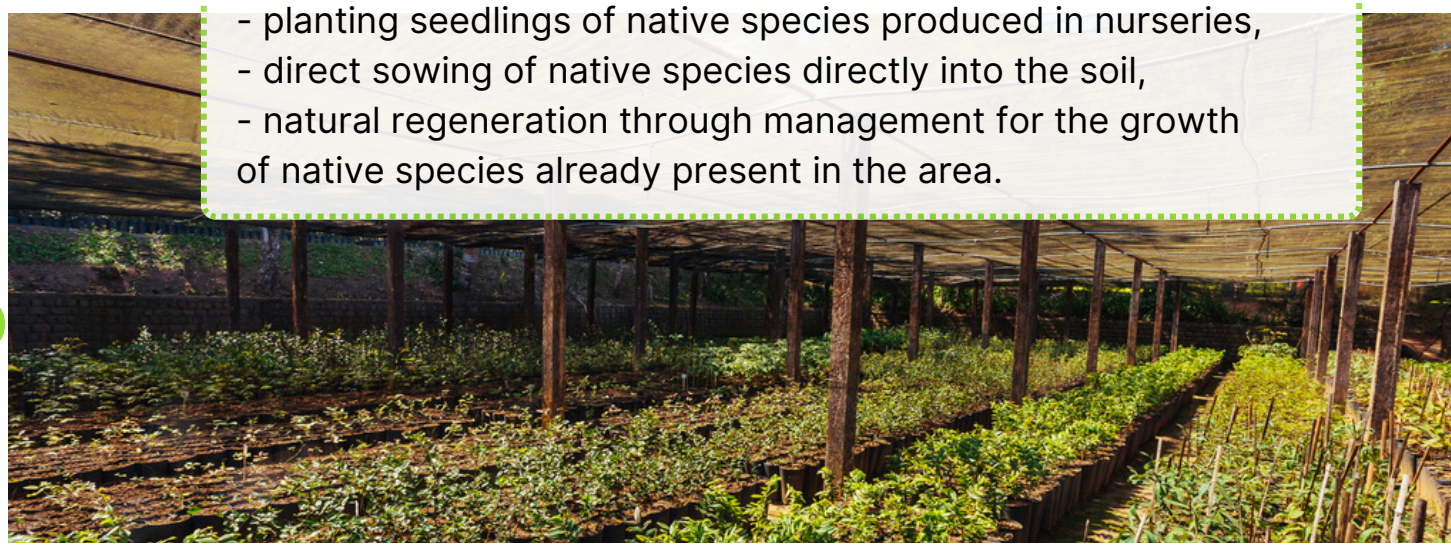
Green areas in Aahus, Denmark. Photo: SVMA collection (CPA-G)

Management associated with ecosystem enrichment tools, according to the phytophysiognomy of the location.

Possible forms of enrichment:

- planting seedlings of native species produced in nurseries,
- direct sowing of native species directly into the soil,
- natural regeneration through management for the growth of native species already present in the area.





Seedlings in municipal nursery. Photos: SVMA collection



Did you know?

The **Harry Blossfeld's Seed and Seedling Guide** provides processing and planting techniques for seeds of various species. Choose native species from the MSP when using it.

Important: flora

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- diversify the vegetation
- never plant invasive species

FAUNA STRATEGIES

56 Fauna crossing structure
58 Insulated electrical network
60 Bird collision prevention solutions
62 Wildlife-friendly lighting
64 Bird shelter (nesting boxes)
66 Bee/insect boxes and hotels
68 Bat shelter
70 Wildlife water access structure

CITY HALL OF SÃO PAULO



Did you know?

The **Fauna-Friendly City Manual** provides important insights into coexistence, management, and protection of wildlife in the city of São Paulo.







1 - Overpass bridge over highway (Tamoios Highway). Photo: Vanessa Cavaglieri
2 - Overpass with macaco-prego. Photo: SVMA collection (DFS - Fábio Ferrão Videira)
3 - Underpass. Photo: Vanessa Cavaglieri

8 WILD ANIMALS COMMONLY HIT BY CARS

90.2% of wild animals do not survive being hit by cars

(Fauna-Friendly City Manual, 2024)



Alouatta guariba
(bugio-ruivo)



Turdus rufiventris
(sabiá-laranjeira)



Callithix sp.
(sagui)



Megascops choliba
(corujinha-do-mato)



lHydrochoerus hrydrochaeris
(capivara)



Didelphis aurita
(gambá-de-orelha-preta)



Subulo guazoubira
(veado-catingueiro)



Salvator merianae
(teiú)

Photos: SVMA collection (DFS and ASCOM)

Best options:

- Compact overhead distribution (fig. 1) ✔
- Isolated or multiplexed overhead distribution (fig. 2) ✔✔
- Underground distribution (fig. 3) ✔✔✔

98% of mammals and 81% of birds that are victims of accidents involving power lines do not survive.

(Fauna-Friendly City Manual, 2024)



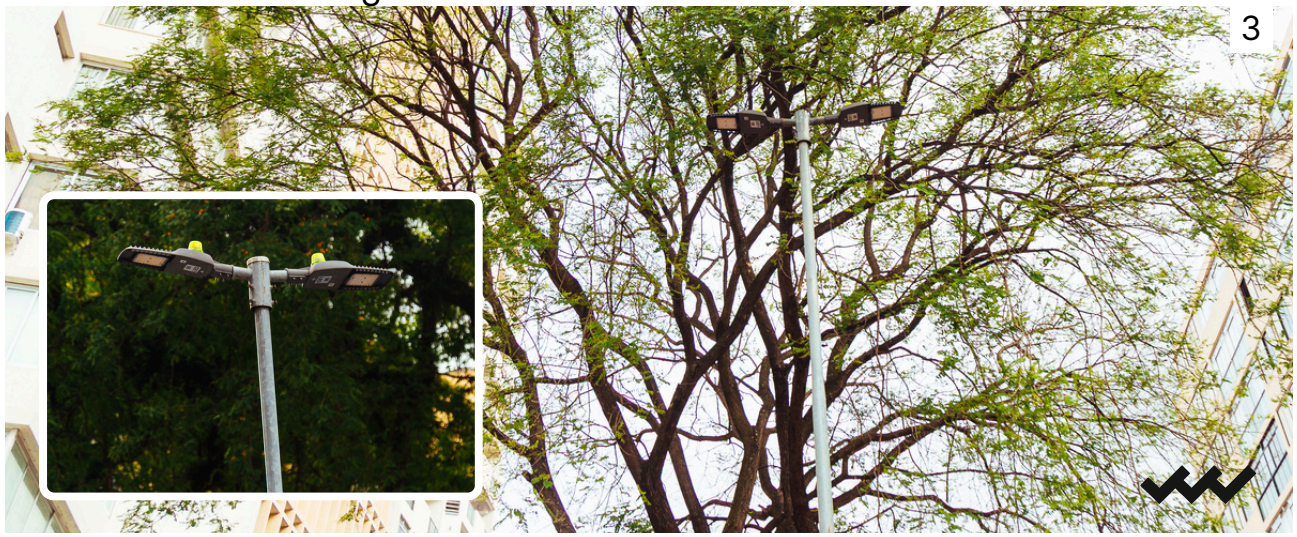
Alouatta guariba
(bugio-ruivo)



Parabuteo unicinctus
(gavião-asa-de-telha)







Photos: SVMA collection (ASCOM)

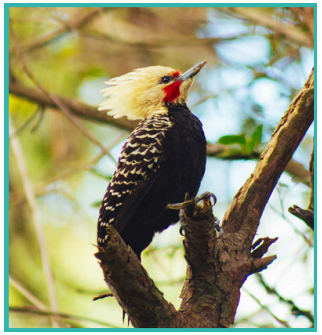
Home solutions (fig. 1)
Ultraviolet film (fig. 2)
Screen-printed glass (fig. 3)
Inclined glass (fig. 4)
Barriers such as plants and blinds (fig. 5)
Textured film (fig. 6))

About 70% of collision victims do not survive

(Fauna-Friendly City Manual, 2024)



Brotogeris tirica
(periquito-rico)



Celeus flavescens
(pica-pau-de-cabeça-amarela)



1 - Photo: SVMA (DFS) collection. 2, 3, 4, 5, and 6 - Illustrations: generated by AI. References: https://share.google/G8eqmKyP0hKNBOYIr e https://peliculachic.com.br/categoria-amiga-dos-passaros-inteiras/

Artificial night lighting can disorient migratory birds and bats, attract flying insects that die from burns or exhaustion, alter the circadian cycle of birds, disrupt the communication of fireflies, attract fish to dangerous situations, and modify the reproductive behavior of amphibians, among other things.



Did you know?

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Remember:

Do not illuminate bodies of water and natural areas. Amber lamps (up to 4,000K) are most suitable for urbanized areas.



Turdus rufiventris
(sabiá-laranjeira)



Rhinella icterica
(sapo-cururu)

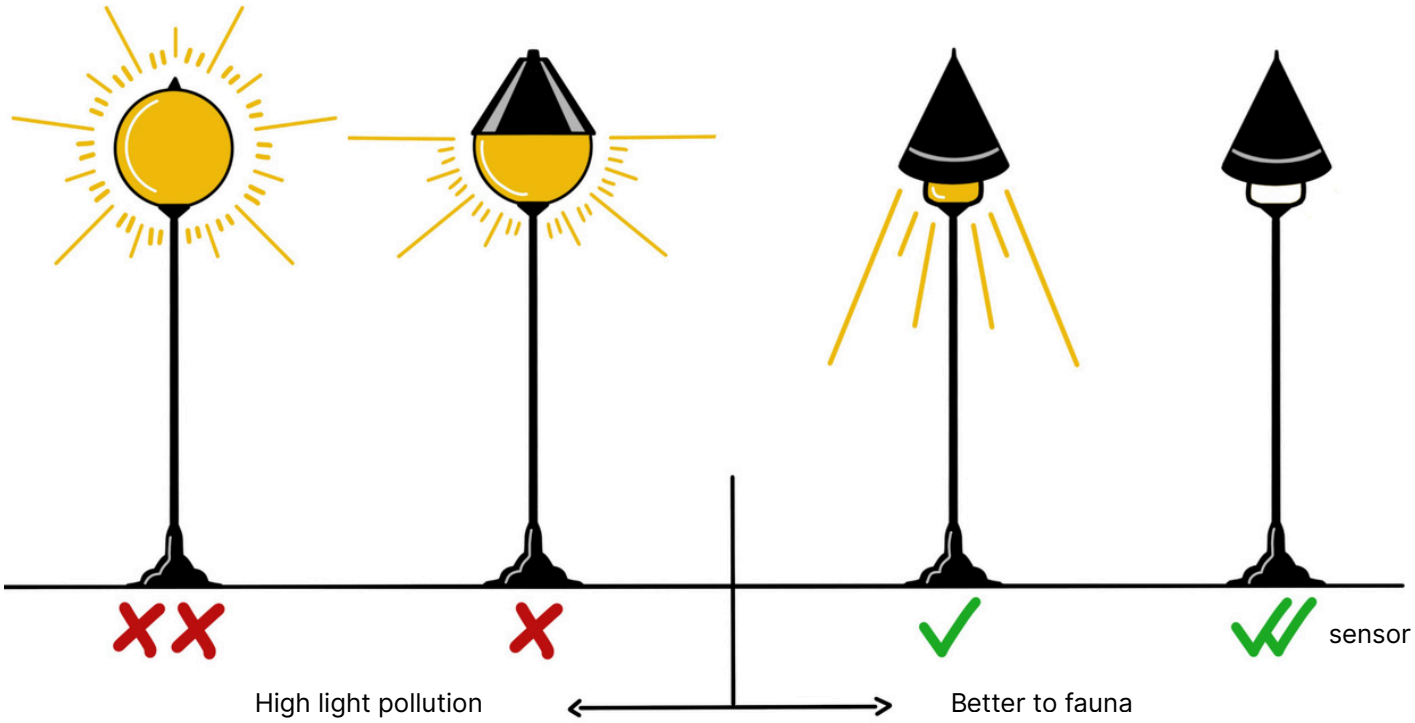


Illustration: SVMA collection
Reference: https://www.abdnha.org/borregodarksky/

AP Bird shelter (nesting boxes)

The lack of natural cavities can be a problem for birds that nest in the hollows of old trees.

The nest box increases the supply of nests for birds that use cavities to breed, such as woodpeckers, parakeets, parrots, toucans, corruíras, canaries, and swallows.

The shelter should be installed in a location protected from strong winds, rain, and direct sunlight, preferably away from areas of heavy traffic.



Registration of *Myiodynastes maculatus* (bem-te-vi-rajado) in the Córrego do Bispo Linear Park. Photo: SVMA collection (DFS)



Dryocopus lineatus
(pica-pau-de-banda-branca)



Forpus xanthopterygius
(tuim)



Troglodytes musculus
(corruíra)

Insects are essential to global biodiversity. They are the main pollinators of plants, ensuring plant reproduction and food production.

They act as vital recyclers by decomposing organic matter and enriching the soil, as well as being the basis of the food chain for countless animals. Their role is indispensable to the balance and sustainability of all ecosystems.

Bees are among the most efficient pollinators on the planet, ensuring the reproduction of most plants and the maintenance of biodiversity.





1 - Boxes for stingless bees at the Zoonosis Surveillance Division. Photo: SMS collection (DVZ - Rafael Salim Nassar)
2 - Insect hotel in Shangrilá Park. Photo: SVMA collection

There are several species of bats. Most of them, especially those adapted to city life, are insectivorous, meaning they eat insects. Others are important pollinators and seed dispersers.

They are capable of flying long distances and defecating the seeds intact, spreading them over vast areas.

BUT BE AWARE!
Bats are wild animals and should not be touched! If you find a bat on the ground, alive or dead, call number 156 and it will be removed by the Zoonosis Surveillance Service.



1 - Bat shelter. Photo: SVMA Collection (DFS).
2 - Mimon bennettii (morcego-orelhudo). Photo: Irineu Cunha

Wildlife water access structure

Important:

- clean up water bodies
- remove barriers that prevent animals from accessing water bodies
- renaturalize water bodies
- install fountains
- install drinking fountains



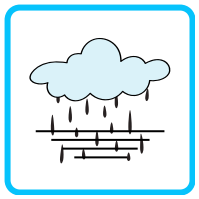
1 - Lake in Jardim Felicidade Park. Photo: SVMA collection
2 - Drinking fountains in Jacintho Alberto Park. Photo: SVMA (DFS) collection

DRAINAGE STRATEGIES

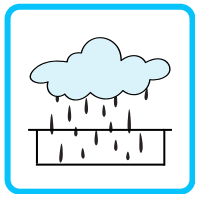
74 Sustainable urban drainage system (SUDS)
76 Bioretention
78 Reservoir park
80 Reservoir sport field
82 Linear reservoir system
84 Vegeted (hydraulic) staircase
86 Rainwater harvesting system
88 Roof retention (green-blue roof)
90 Linear park
92 Hybrid solutions for riverbank containment
94 Natural solutions for riverbank containment
96 Re-naturalization of water bodies
98 Spring restoration
100 River meandering
102 Rediscovery of the hidden water network

CITY HALL OF SÃO PAULO

Integration of sustainable drainage techniques. This generally includes:



Infiltration solution



Retention solution



Detention solution

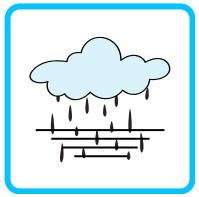
Importante!

When it comes to drainage solutions, always choose those that incorporate recreational spaces and promote biodiversity.



1 - Photos in the Carlsberg Basin in Copenhagen, Denmark. Photos: SVMA collection (CPA-G)
2 - Photo: Google Maps.
3 - Map of interventions in the Carlsberg Basin: Climate change adaptation and investment strategy

- rain garden (organic shape)
- rain garden (geometric shape)
- bio-swale



Infiltration solution



Detention solution

Important: flora

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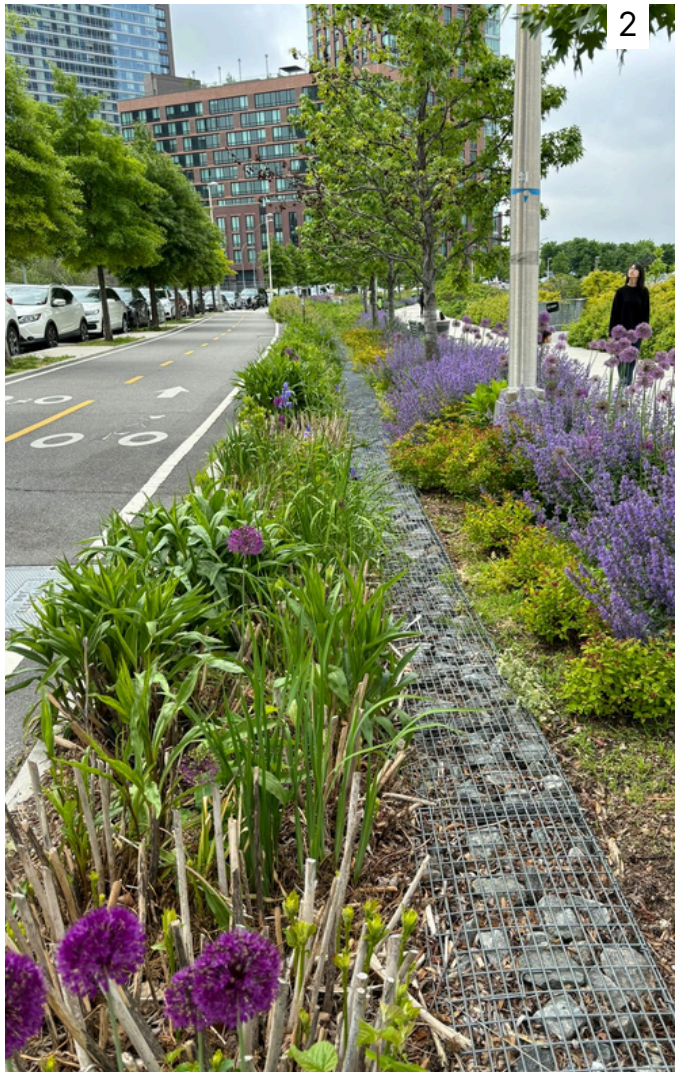
- never plant invasive species


1


2

1 - Rain garden in Jabaquara, São Paulo. Photo: SVMA collection (CPA-G)
2 - Bio-swale at Hunter's Point South Park, New York. Photo: SVMA collection (CPA-G)



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10 SPECIES TO PLANT IN GARDENS, RAIN GARDENS, AND BIO-SWALES



Neoblechnum brasiliense (samambaiaçu-do-brejo)



Sphagneticola trilobata (picão-da-praia)



Costus spiralis (cana-do-brejo)



Cyrtocymura scorpioides (erva-preá)



Philodendron martianum (babosa-de-pau)



Clusia criuva (mangue-do-mato)



Justicia Carnea (jacobínia)



Thaumatophyllum bipinnatifidum (guaimbê)



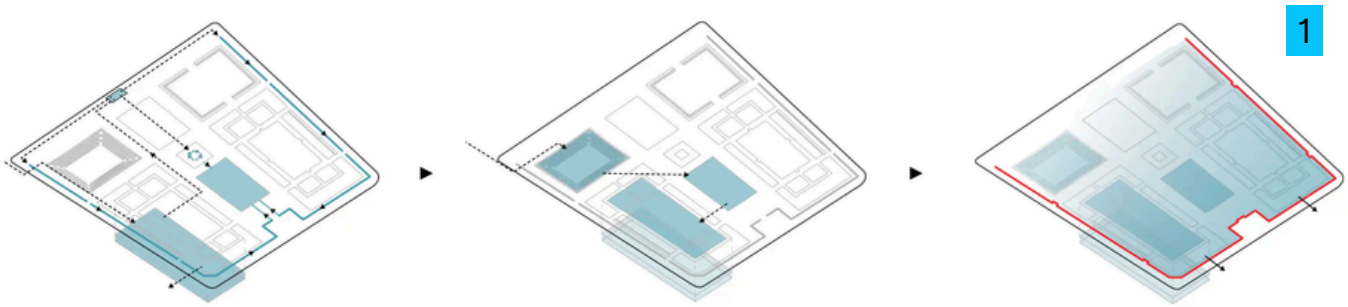
Alternanthera brasiliana (penicilina)



Indigofera suffruticosa (anileira)

Photos: SVMA collection (DPHM)

Detention solution



Daily rainfall circulation | 10-year rainfall | 100-year rainfall









Important: flora

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- diversify the vegetation
- never plant invasive species

Reservoir park in Copenhagen, Denmark. 1 - Illustration: https://www.thirdnaturearchitects.com/case/adaptation-park. 2 - Map: Google Maps. 3 - Photos: SVMA collection (CPA-G)

Detention solution





Important!

Arrange for the courts to be cleaned after heavy rains and coordinate with the community so that the courts are only used when clean, preventing the spread of disease.

Reservoir courts in Copenhagen, Denmark. Photos: SVMA collection (CPA-G)

Detention solution

Important: flora

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Linear reservoirs in Copenhagen, Denmark. 1 - Map: Google Maps.
2 - Scandiagade. 3 and 4 - Tasinge Plads. Photos: SVMA collection (CPA-G)



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- diversify the vegetation
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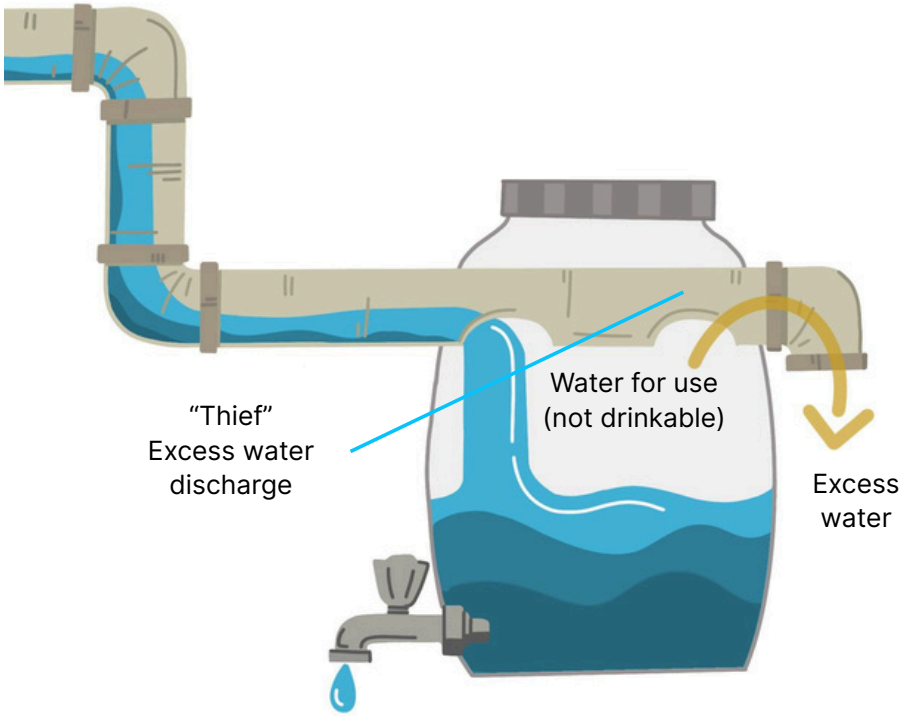
Dona Paulina Viaduct. Photo: https://prefeitura.sp.gov.br/web/se/w/noticias/121529f

Cistern

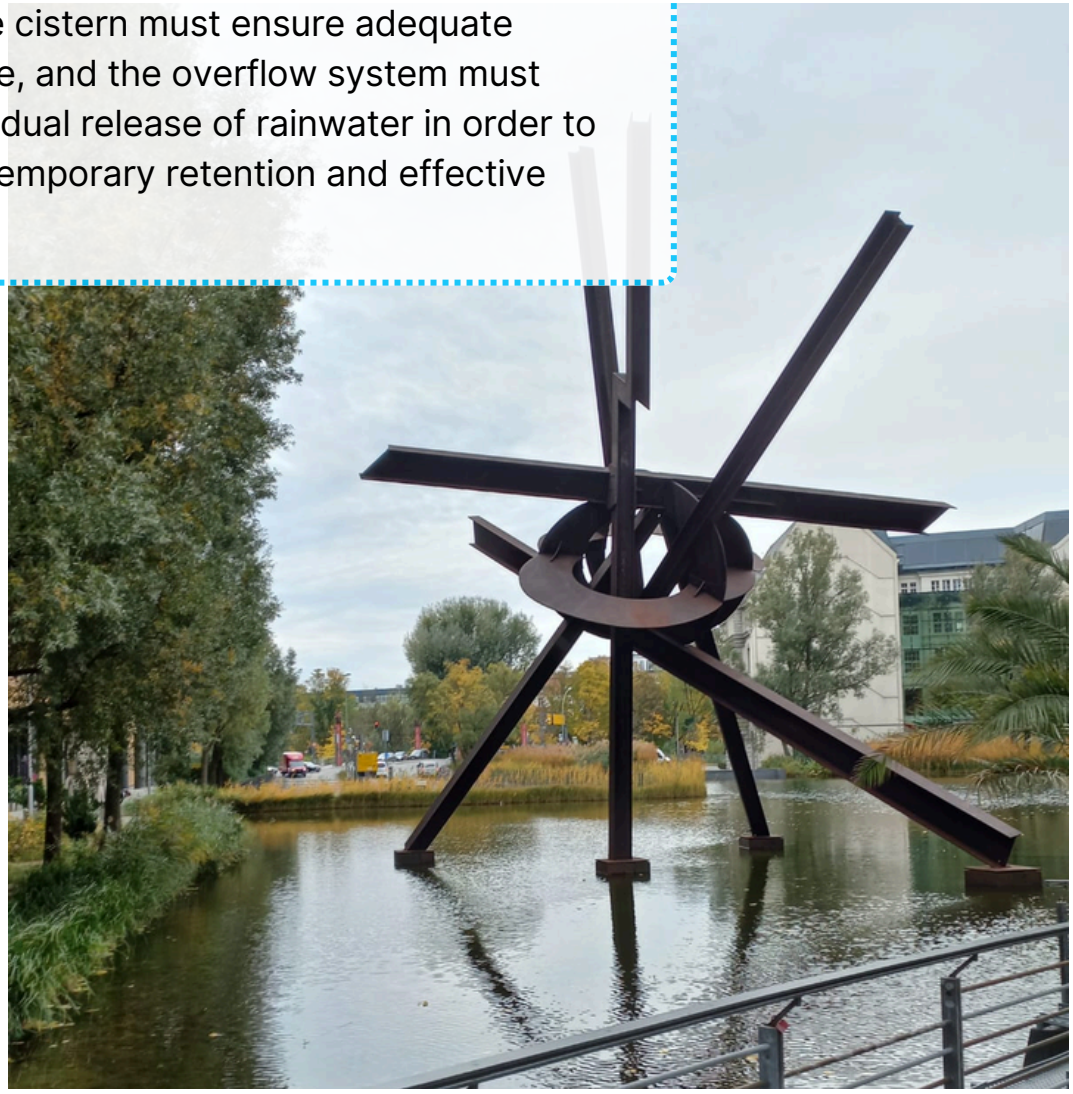
Retention solution

Important!

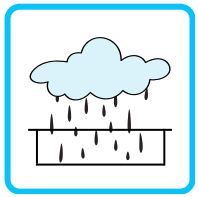
The size of the cistern must ensure adequate storage volume, and the overflow system must ensure the gradual release of rainwater in order to contribute to temporary retention and effective flood control.



Homemade cistern. Illustration: SVMA collection
Reference: Environmental Sanitation Booklet APA Capivari-Monos



Reflecting pool with rainwater at Potsdamer Platz, Berlin. Photo: SVMA collection (CPA-G)



Retention solution



Roof of the Bijenkorf in Rotterdam, Netherlands. Photo: Iris van den Broek

- parks around water bodies



Detention solution

Important: flora

- plant as many species native from the municipality as possible
- diversify the vegetation
- never plant invasive species



Aerial view of Tiquatira Linear Park - Eng. Werner Eugênio Zulauf. Photo: SVMA collection

- gabion/wall with vegetation or flat mattresses with vegetation
- concrete/cribwall type with vegetation
- polyethylene/geocells with vegetation
- concrete only for stabilization and vegetated river bank



Did you know?

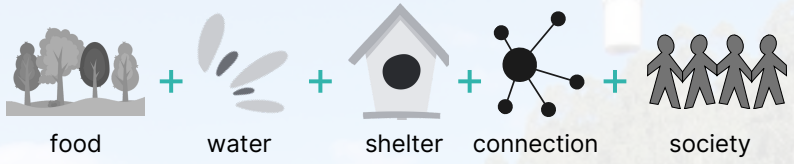
The NbS Catalog for open spaces offers a variety of ideas for edge containment.

Important: flora

- plant as many species native from the municipality as possible
- diversify the vegetation
- never plant invasive species

Fauna needs

In the urban areas of the São Paulo city

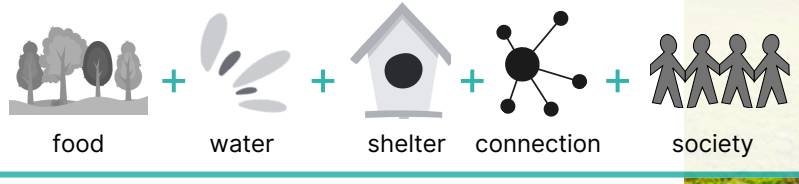


Work on Ribeirão Perus Park in MSP, with concrete containment for stabilization only.
Photo: SVMA (DPU) collection

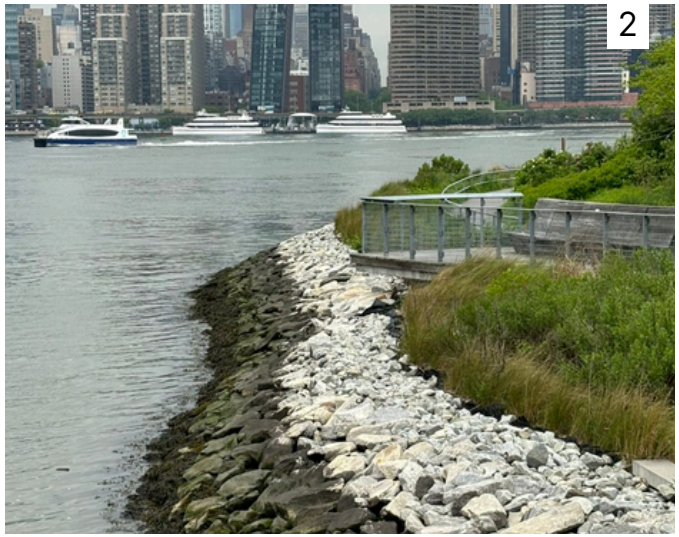
Wood: 'living support'
Stone: retaining wall or stone wall with vegetation

Fauna needs

In the urban areas of the São Paulo city









1 - Ribeirão Caulim Linear Park. Photo: SVMA collection
2 - River at Hunter's Point South Park, New York. 3 - Wooden retaining wall at Severo Gomes Park. Photos: SVMA collection (CPA-G)

Renaturalization encompasses restoring:
- the shape of the body of water (curves and depths)
- the ecological function (return of biodiversity)
- the hydrological function (flows)
- the social function (recreation and socializing)

Fauna needs

In the urban areas of the São Paulo city







Renaturalization of the Saw Mill River in Yonkers, New York. Photo: SVMA collection (CPA-G)

Important: flora

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Lontra longicaudis
(lontra)



Boana bischoffi
(perereca-lineada)



Pardirallus maculatus
(saracura-carijó)

Includes:
- water cleaning (pollution)
- erosion control
- soil preparation
- revegetation with native species
- monitoring and maintenance



Source of the Aricanduva River. Photo: SVMA collection

Important: flora

- plant as many species native from the municipality as possible
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- never plant invasive species

A meander is a U-shaped bend in a river, allowing it to slow down. In the past, rivers were straightened by cutting away meanders.

Reconnected meanders can have a positive impact on sedimentation and biodiversity and also provide habitats for aquatic and terrestrial plant and animal species.







Restoration of the original course of the Gudena River, Denmark.
Maps: Google Earth. Photo: SVMA collection (CPA-G)

Fauna needs

In the urban areas of the São Paulo city



- stream opening
- landscaping



Did you know?

SIURB's Drainage Notebooks contain NbS proposals for various MSP basins.

Fauna needs

In the urban areas of the São Paulo city

food + water + shelter + connection + society





1 - Proposal to open up the Boa Vista Stream. 2 - Landscaping proposal to commemorate the spring.
Images: Drainage notebook - Sapateiro Stream Basin

ROADWAY STRATEGIES

106 Permeabilization of roads and sidewalk
108 Permeable pavement
110 Sidewalks with trees
112 Tree-friendly beds
114 Planting of potted plants
116 Green bed parking spot
118 Biodiverse roundabout
120 Biodiverse flowerbeds
122 Green overpass
124 Green bus stop

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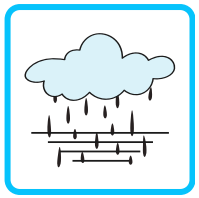


Infiltration solution

Expand permeable areas in the city's road system:
- sidewalks
- parking spaces
- streets/paved areas

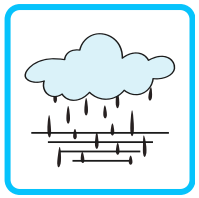








1 - Permeable sidewalk. 2 - Permeable sidewalk with pavement only at the building entrance
3 - Permeable parking lot. All in Dresden, Germany. 4 - Breaking up the asphalt for the Butantã Green Corridor.
Photos: SVMA collection (CPA-G)



Infiltration solution

Expand permeable areas in the city's road system:
- sidewalks
- parking spaces
- streets/paved areas







1 - Permeable pavement with reuse of tree management material in Anhanguera Park.
2 and 3 - Trail covering with crushed material in Nabuco Park and Nascentes do Ribeirão Colônia Park.
Photos: SVMA collection (DGPU)

Observe before planting on the sidewalk...

Sidewalk width	Plant only with a minimum total width of 1.90 m, to reserve 1.20 m free for pedestrian traffic.
Overhead power lines	If present, never choose medium-sized species (they interfere with wiring).
Building setback	If there is no setback on the property, the tree must have a columnar crown.
Road type	Roads with heavy traffic or bus lanes require species with columnar crowns.
Street furniture	Assess the distance from poles, signs, storm drains, ramps, etc.
Tree size	Choose according to the space available for roots and canopy.
Minimum distance from buildings	2m: small • 4m: medium • 7m: large
Minimum distance from walls/fences	1m: small • 2m: medium • 3m: large

Important: flora

- plant as many species native from the municipality as possible
- diversify the vegetation
- never plant invasive species



Photo: https://www.prefeitura.sp.gov.br/cidade/secretarias/subprefeituras/calcadas/index.php?p=36939

Did you know?

For more details on how to plant safely on sidewalks, see the SVMA Technical Manual for Urban Forestry.

10 NATIVE SPECIES FOR SIDEWALKS



Did you know?

The guide Native Species of Flora in the Municipality of São Paulo lists the native species of the MSP, their phytophysiognomies, habits, frequency, rarity, and threat of extinction.



Eugenia uniflora
(pitangueira)



Psidium cattleianum
(araça)



Jacaranda puberula
(carobinha)



Cedrela fissilis Vell.
(cedro)



Cariniana estrellensis
(jequitibá)



Handroanthus chrysotrichus
(ipê-amarelo)



Hymenaea courbaril
(jatobá)



Luehea grandiflora
(açoita-cavalo)



Cabralea canjerana
(canjerana)



Handroanthus heptaphyllus
(ipê-roxo)

Photos: SVMA collection (DPHM)

- compatible with the size of the tree ✓ (sufficient space for root development)

- allows rainwater to infiltrate and reach the roots ✓

- includes other strata (integration with the urban environment, aesthetics, and drainage) ✓

- no grates, walls, cement, blocks, or other structures that prevent the natural growth of roots or the base of the trunk ✓

Important: flora

- plant as many species native from the municipality as possible
- diversify the vegetation
- never plant invasive species



1 - Example of a tree-friendly construction site. 2, 3, and 4 - Practices to be eliminated.
Photos: SVMA collection (DAU and ASCOM)

Hey, tree!
What do our trees have to say?



"Hey, I'm a living being!"

"I am here to help! I improve the air, regulate the climate, provide shade, retain rainwater, and provide shelter and food for various species."

"I need to breathe. Don't smother me too much or unnecessarily!"

"Prune me correctly! Wrong pruning can kill me!"

"I am thirsty, I need space for water to enter, don't pave over my roots!"

"My roots are my feet, they support me. Please don't cut them."

"It took me a long time to grow up. Do your best not to cut me!"

"I am alive, just as you lose hair, I lose leaves. Don't cut me because I let my leaves fall."

"I'm just trying to survive and I need space. I never meant to break your sidewalk!"

"I absorb everything that reaches my roots. I don't need trash!"



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Important: flora

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- diversify the vegetation
- never plant invasive species


1


2


3

1 - Planting in pots grouped together on a pedestrian street in Callao, Peru. 2 and 3 - Examples in Helsingborg, Sweden. Photo: SVMA collection (CPA-G)



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Green bed parking spot in São Paulo.
Photo: SVMA (DAU) collection



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Biodiverse roundabout in Copenhagen, Denmark. Photo: SVMA collection (CPA-G)

CB Biodiverse flowerbeds

The diversification of bushes and herbaceous plants, with little or no management, promotes biodiversity.






Biodiverse flower beds in Copenhagen, Denmark. Photos: SVMA collection (CPA-G)

Important: flora

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- diversify the vegetation
- never plant invasive species



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EXAMPLE OF A COMBINATION TO CREATE A BIODIVERSE FLOWER BED WITH FLOWERS

Phytophysiognomy: forest

In this flowerbed there is:

Habit diversity: herbaceous, shrub, vine, epiphyte, and trees, occupying different vegetation strata.

Flowers of different colors and flowering times in different seasons that will attract diverse pollinators throughout the year, increasing biodiversity.



Herbaceous: *Eryngium horridum* (língua-de-tucano)
Color: **green**
flowering: spring/summer



Tree 1: *Cassia ferruginea* (canafístula)
Color: **yellow**
flowering: spring/summer



Arbusto: *Leandra australis* (pixirica)
Color: **red**
flowering: autumn/winter



Epiphyte: *Tillandsia stricta* (bromélia)
Color: **lilac**
flowering: spring/summer



Tree 2: *Pleroma mutabile* ou *Pleroma raddianum* (manacá-da-serra)
Color: **pink and white**
flowering: autumn/winter



Climbing plant: *Pyrostegia venusta* (cipó-de-são-joão)
Color: **orange**
flowering: autumn/winter

Photos: SVMA collection (DPHM)



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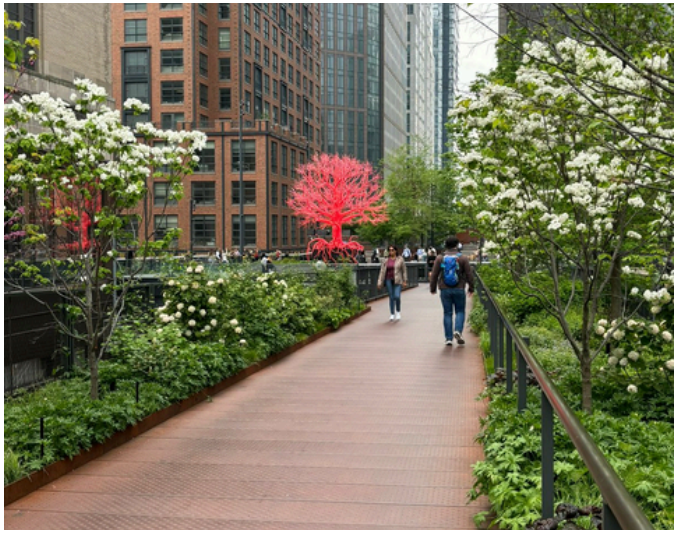

High Line/Hudson Yards, New York.
Photo: SVMA collection (CPA-G)

Important: flora

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Did you know?

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Important to know!

- The structure of the bus stop must take into account the weight of the vegetation and its growth,

- Proper waterproofing and the choice of weather-resistant materials are also important.

- An automated irrigation system can facilitate maintenance.

- Pruning, fertilization, and pest control should be ongoing activities to ensure the proper maintenance of the bus stop.

Green bus stop in Copenhagen, Denmark. Photo: SVMA collection (CPA-G)

ARCHITECTURE STRATEGIES

128 Vegetated hedge
130 Green wall
132 Urban forest building
134 Energy eficency solutions
136 Green roofs on new buildings
138 Green roof adapted to existing buildings
140 Integrated green roofs
142 Suspended building or structure
144 Biodiverse private garden
146 Reuse of tree management materials for furniture

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Important: flora

- plant as many species native from the municipality as possible
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1 - Hedge with climbing plants *Pyrostegia venusta* (cipó-de-são-joão).
2 - Example with climbing plant *Cissus verticillata* (insulina-vegetal).
Photos: acervo SVMA (DPHM)

- green walls
- climbing green walls
- green wall with planter/plant box
- green fences



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Wall of the CaixaForum Madrid cultural center. Photo: Larissa Bueno Mendonça

This SbN requires high-cost maintenance because:
- Seedlings need to be replaced constantly.
- Irrigation is necessary (often with water trucks).

The lack of proper maintenance can:
- create breeding grounds for dengue and other synanthropic animals
- accumulate moisture that can damage the structure
- cause problems due to the fall of species that grow too much and fall under their own weight.

REMEMBER

If you choose this solution, never plant invasive species such as lambari, singônio, dracena, etc.

6 NATIVE SPECIES FOR GREEN WALLS AND FENCES

Vertical gardens

They can be a good idea because they will be constantly and carefully cultivated and also contribute to food security.



Eryngium horridum
(língua-de-tucano)



Cassia ferruginea
(canafístula)



Leandra australis
(pixirica)



Tillandsia stricta
(bromélia)



Pleroma mutabile
or Pleroma raddianum
(manacá-da-serra)



Pyrostegia venusta
(cipó-de-são-joão)

Photos: SVMA collection (DPHM)



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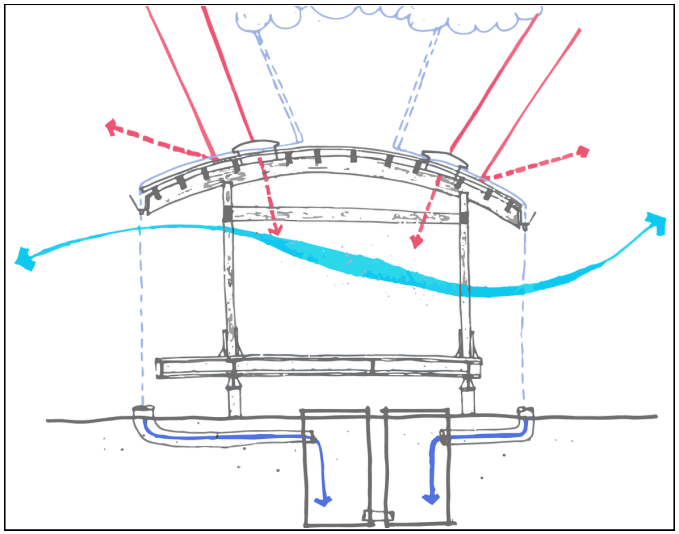
Torre Mata Atlântica in MSP, a project by architect Jean Nouvel that shelters around 200 trees.
Photo: SVMA collection (CPA-G)

Skylight and light-colored roof tiles (1)
Solar panel (2)
Cross ventilation (3)









Solutions adopted at Fazenda do Carmo Municipal Natural Park.
Photos: SVMA collection (DIPO and ASCOM)

It includes different types:
- extensive
- semi-intensive
- intensive
- with moss
- rooftop

Important: flora

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Did you know:?

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1


2

1 - Vila Ema Municipal Park Project. 2 - Independence Municipal Park.
Photos: SVMA collection (DIPO)



Did you know:?

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Important: flora

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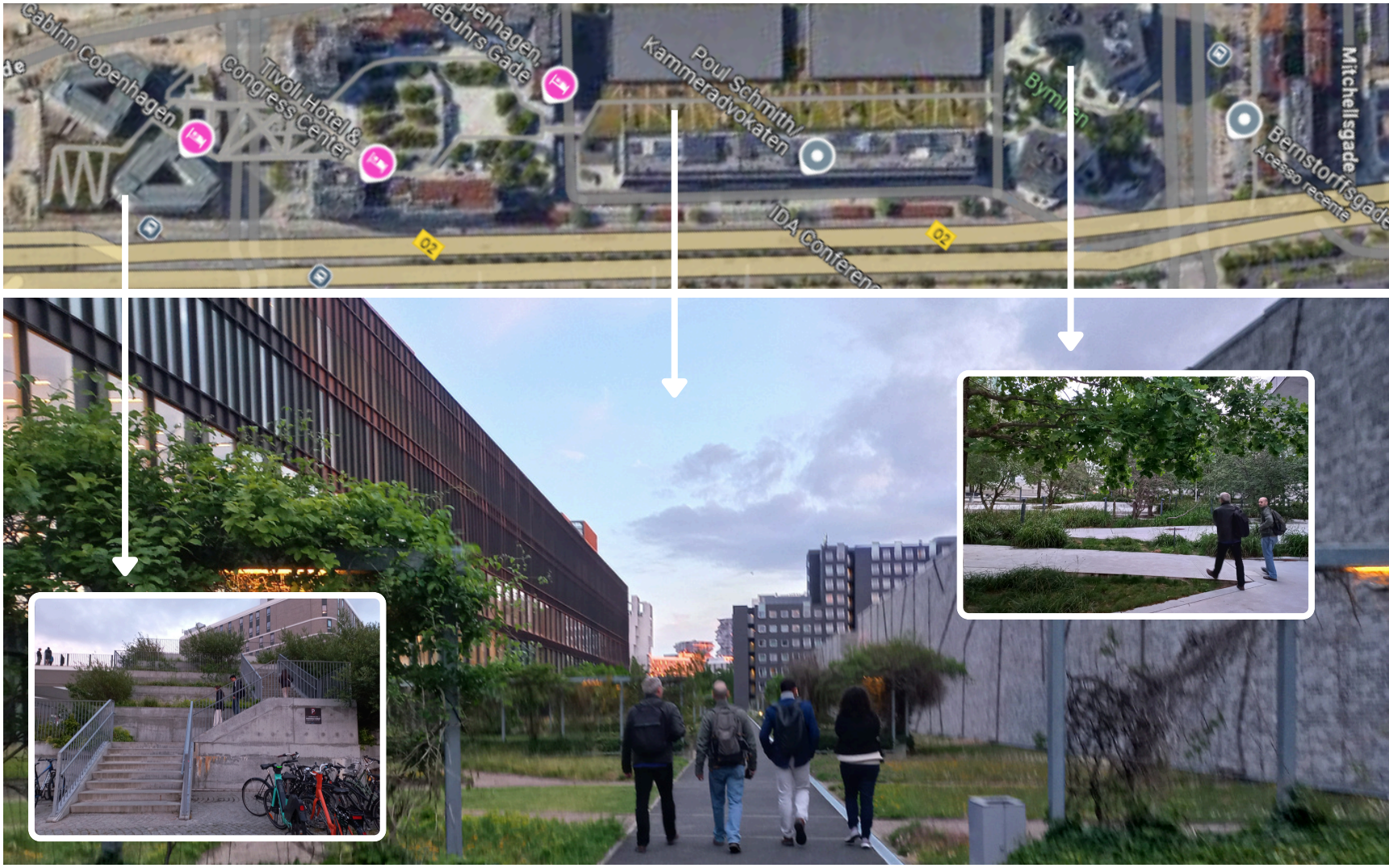
Roof of Eldorado Shopping Mall in São Paulo. Photos: SVMA collection (CPA-G)



Integrated green roofs in Copenhagen, Denmark.
Photos: SVMA collection (CPA-G). Map: Google Maps

Reduction of soil sealing, preservation of vegetation and natural habitats present in the soil, optimization of urban space use.









1 and 3 - Fazenda do Carmo Municipal Natural Park.
2 and 4 - Suspended metal staircase at Shopping Cidade São Paulo.
Photos: SVMA collection



Did you know?

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- never plant invasive species



1 - Residential garden in Butantã, São Paulo. 2 - Sabiá-laranjeira nest in the garden of the residence.
Photos: Letícia Bolian Zimback









1 - Signs in Ribeirão Cocaia Municipal Linear Park. Photo: SVMA collection (ASCOM)
3 and 4 - Benches in Manequinho Lopes Nursery and Anhanguera Municipal Park. Photos: SVMA collection (DPHM and DGPU)

REPARATION STRATEGIES

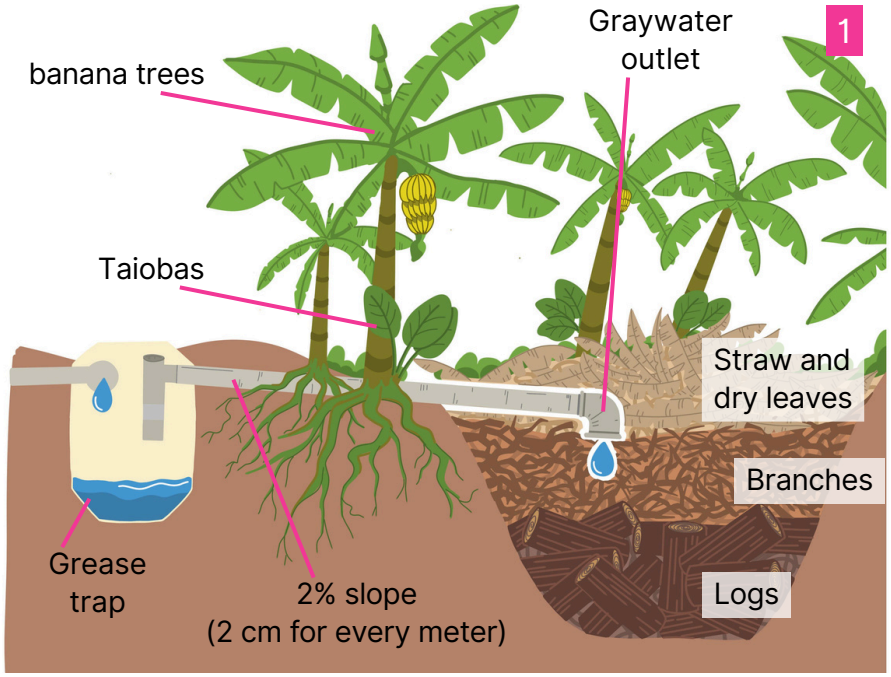
150 Filter garden
152 Biodigester
154 Composting
156 Solution for depolluting water bodies
158 Phytoremediation
160 Restoration of degraded areas
162 Hybrid solutions for controlling risk areas
164 Geocell on slopes

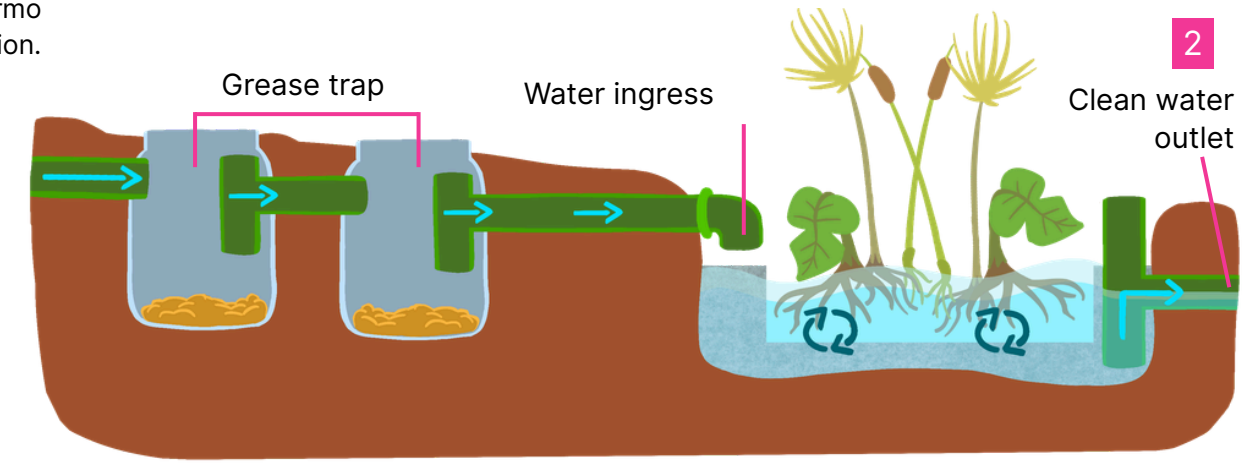
Circle of banana trees (1)
Root filter (2)





Circle of banana trees in the Fazenda do Carmo Municipal Natural Park. Photos: SVMA collection.





1 and 2 - Diagrams. Illustrations: SVMA collection. References: APACM Environmental Sanitation Primer e https://images.app.goo.gl/7p2dth9wYrbyT6fU9 (2)

Important: flora

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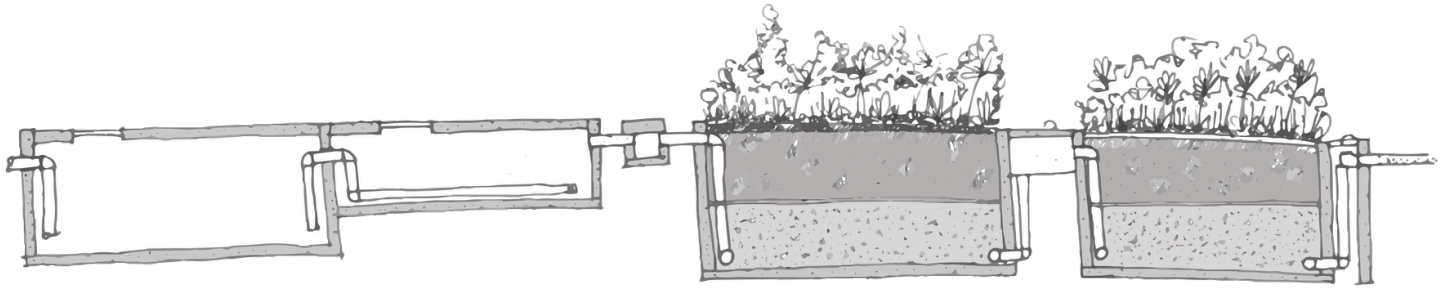
A biodigester is a system that sends organic matter to macrophytic vegetation, thus avoiding the use of the public sewage system and performing treatment on site.





Biodigester at Fazenda do Carmo Municipal Natural Park.
Images: SVMA (DIPO) collection





1 - Composting station at the Arthur Etzel Nursery. Photo: SVMA collection (DPHM)2 - Composting at Nabuco Municipal Park. Photo: SVMA collection (DGPU)







1 - Floating bioremediation rafts to absorb contamination from Lake Lugano, Buenos Aires.
2 - Wetlands in Anhanguera Municipal Park. Photo: SVMA collection (DIPO)

Phytoremediation can be understood as the use of plants (trees, bushes, grasses, and aquatic plants) and their associated microorganisms to remove, degrade, or isolate toxic substances from the environment.

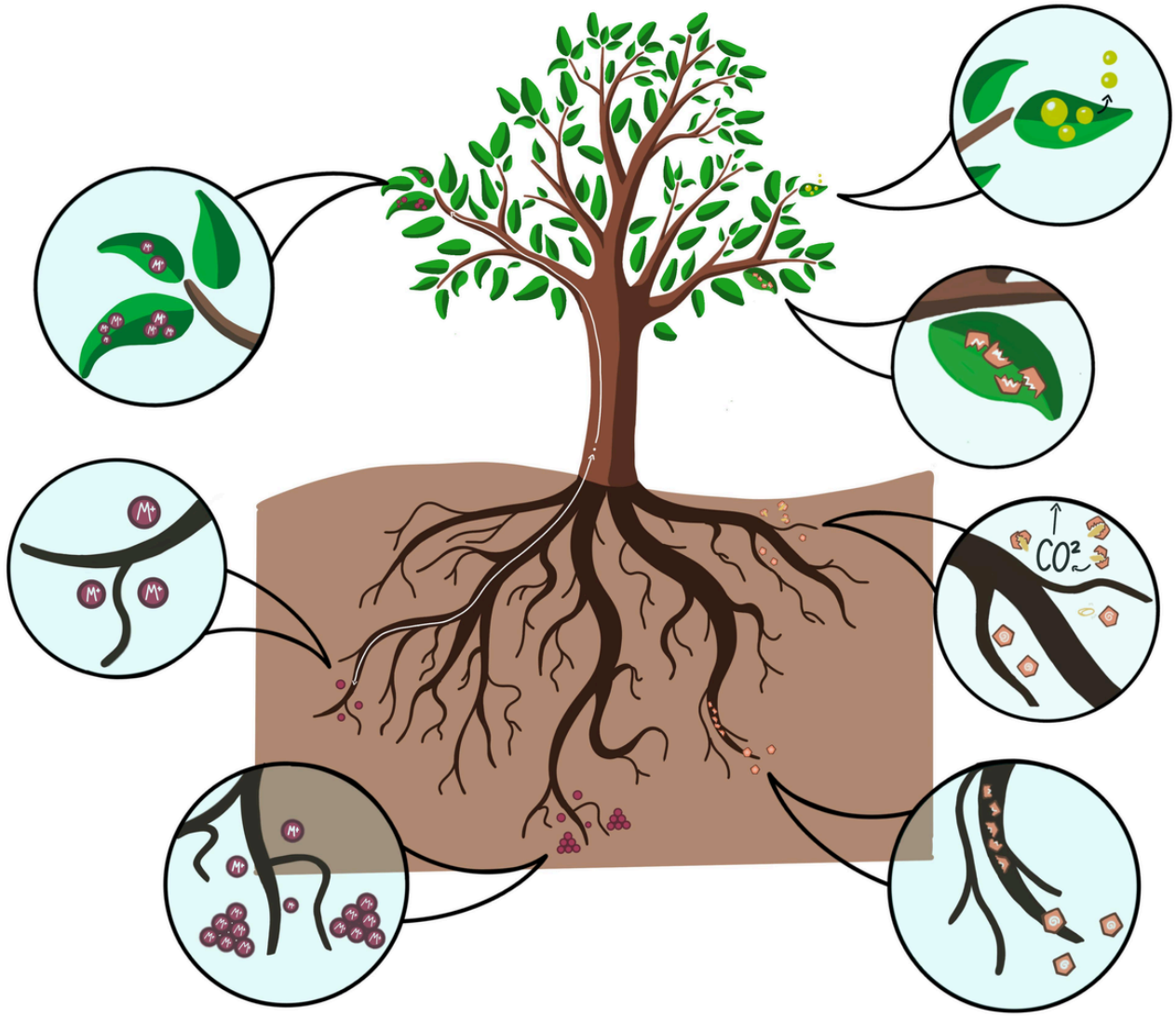


Illustration: SVMA collection. Reference: https://www.researchgate.net/figure/Schematic-representation-of-phytoremediation-strategies_fig1_261100081

Includes:
- decommissioned quarries
- decommissioned landfills
- contaminated areas

Possible actions in a restoration process:

Definition of restoration objectives 	Physical stabilization and risk control 	Remediation (contaminated areas) 
Soil reconstruction / conditioning 	Environmental strategies 	Adaptive monitoring and management 

Illustration: SVMA collection.

Hybrid solutions refer to conventional engineering solutions that are combined with nature-based solutions using appropriate vegetation.

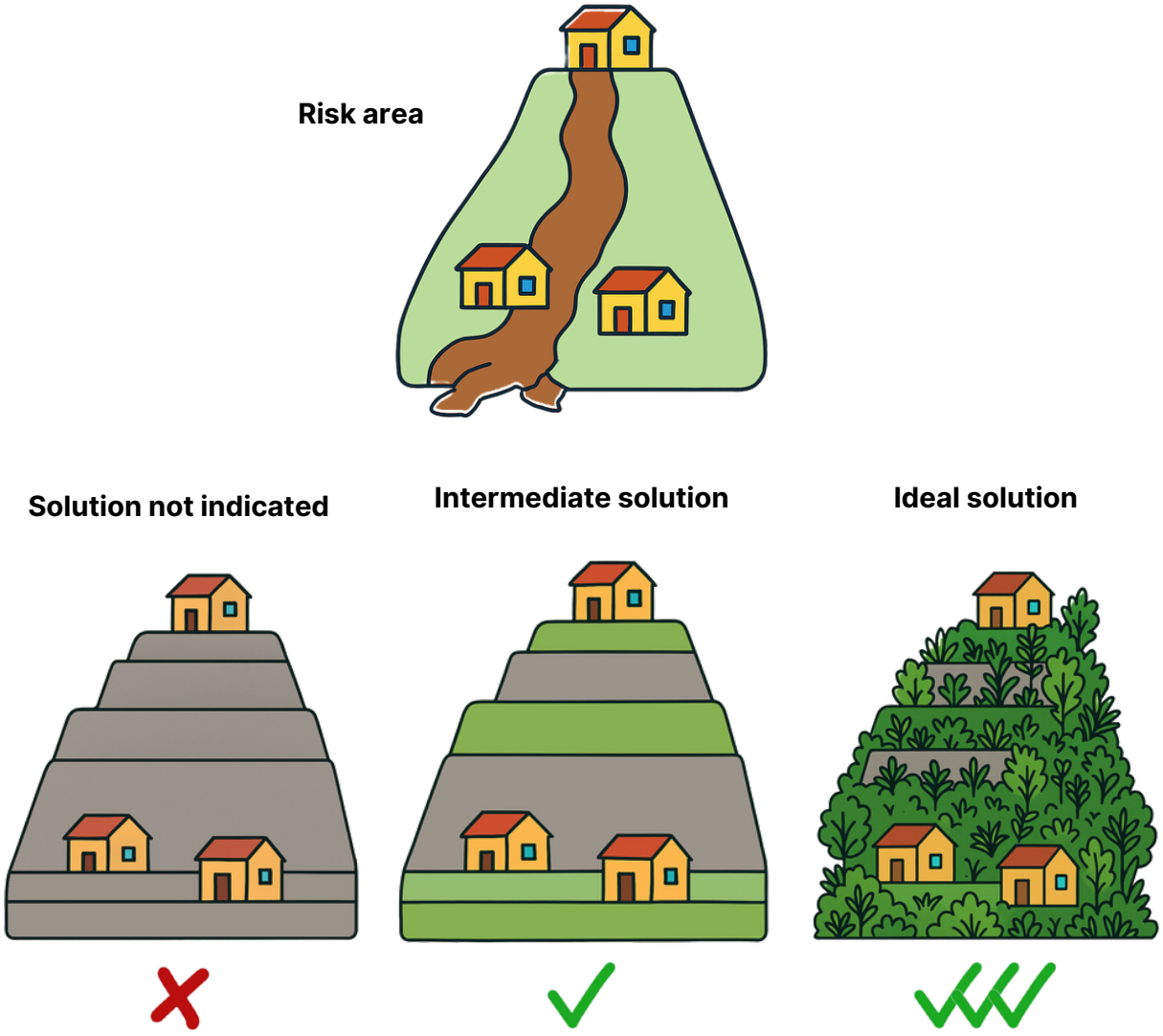


Illustration: SVMA collection.

Hydroseeding (seed mix), diversification of vegetation, and roots can contribute to slope stabilization.

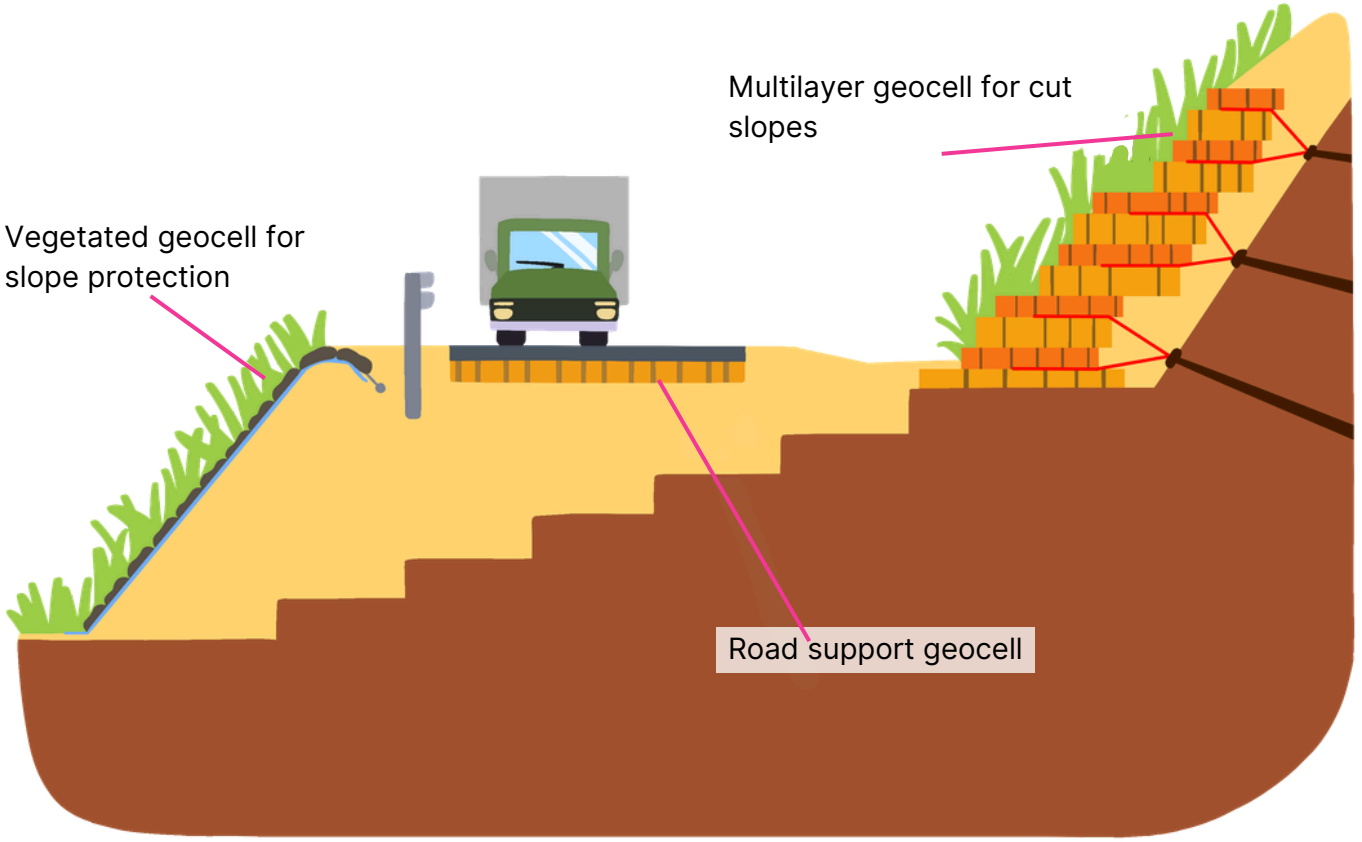


Illustration: SVMA collection. Reference: https://diprotecgeo.com.br/blog/estruturas-de-muros-de-contencao-com-geocelula/

AGRICULTURE STRATEGIES

168 Agroforestry system
170 No-till farming
172 Green manure
174 Adoption of urban fertilizer
176 Use of discarded materials to mark out flower beds
178 Planting flowers for pest control
180 Windbreak
182 Plant selection and diversification

CITY HALL OF SÃO PAULO

An agricultural management system that combines trees, crops, and/or animals to optimize the use of land and water, increase productivity, and generate environmental and socioeconomic benefits.





Sites with agroforestry systems in the southern zone of the MSP. Photo: SVMA (CFA) collection

Important: flora

- plant as many species native from the municipality as possible
- diversify the vegetation
- never plant invasive species

Soil permanently covered with mulch, crop residues and compost.

Permanent beds, without excessive tillage.

Benefits:
- reduces erosion and conserves moisture,
- increases soil fertility and life,
- greater productivity and resilience.



Site in the southern part of the MSP. Photo: SVMA collection (CFA)

Green manure

Also known as green manure, it is an agricultural technique that involves growing certain plants, mainly legumes and grasses, which, instead of being harvested, are cut and incorporated or left as ground cover.

Benefits:

- Biological nitrogen fixation.
- Increased organic matter and soil fertility.
- Control of spontaneous plants and reduction of erosion.
- Stimulation of biodiversity and attraction of pollinators.



Green manure with banana, cassava, and Mexican sunflower in the CEPEUSP Agroecological Garden.
Photo: SVMA collection (UMAPAZ)

Adoption of urban fertilizer

Urban fertilization is a method that uses animal or plant materials that have already undergone a decomposition process (composting, for example).

The incorporation of manure, biosolids, and crop residues increases carbon storage.



Composting at the CEPEUSP Agroecological Garden.
Photo: SVMA collection (UMAPAZ)

Use of discarded materials to mark out flower beds





1 - Guarapiranga Dam Municipal Park. Photo: SVMA collection (CPA-G)
2 - Manequinho Lopes Nursery. Photo: SVMA collection (UMAPAZ)

Specific flowers can attract beneficial insects and improve biological pest control, as well as enhancing the aesthetics of the site.

Some flowers may be edible.



Lavender plantation at the Manequinho Lopes Nursery. Photo: SVMA collection (UMAPAZ)

Important: flora

- plant as many species native from the municipality as possible
- diversify the vegetation
- never plant invasive species

Planting usually consisting of one or more rows of trees or shrubs to protect wind-sensitive crops, control soil erosion, and facilitate pollination.

- improves overall plant comfort,
- reduces moisture loss.



Windbreak on a farm in the southern part of the MSP. Photo: SVMA collection (CFA)

Important: flora

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- never plant invasive species

Plant selection and diversification

The consortium or combination of planting different species can increase the efficiency of agroecosystems. Ecological services such as pollination, biological control, and nutrient cycling are favored.

In urban areas, diversity and the appropriate choice of vegetation can increase their stability and sustainability.



Diversified planting with PANCS, tomatoes, lettuce, etc., in the CEPEUSP Agroecological Garden. Photo: SVMA collection (UMAPAZ)

SERVICE STRATEGIES

186 Monitoring of deforestation
188 Monitoring of Permanent Preservation Areas (PPA)
190 Monitoring of animal trafficking
192 Cleaning and maintenance for biodiversit
194 Proper pruning
196 Prevention and fighting against forest fires
198 Proper disposal of solid residues

CITY HALL OF SÃO PAULO



Photo: SVMA collection (CFA)



Photo: SVMA collection (CFA)





Turtles seized from traffickers, delivered to the Center for Management and Rehabilitation of Wild Animals (CeMaCAS).
Photo: SVMA (DFS) collection

Includes:
- fertilization
- trash removal
- pruning
- pest and disease control
- mulch maintenance
- tree collar protection

Important:
The impact of the brush cutter damages the seedlings, which grow damaged, allowing pests and diseases to enter.







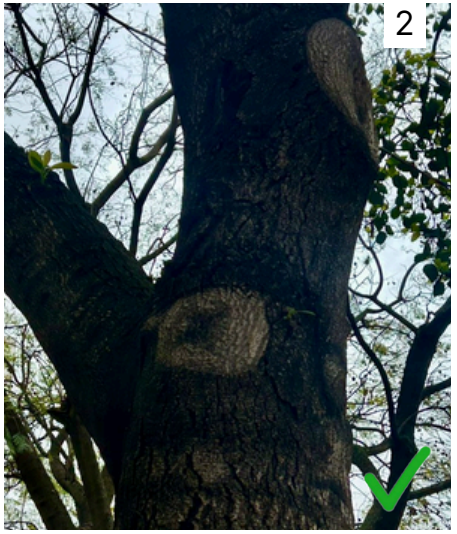
1 - Butantã green corridor. 2 - Plant damaged by brush cutter.
3 - Tree seedlings with collar protection. Photos: SVMA collection (CPA-G and DAU)

Did you know?



The **Technical Manual for Tree Pruning** provides guidelines on correct pruning, avoiding exposure of the tree's internal tissue, which after cutting is exposed to fungi and rot.



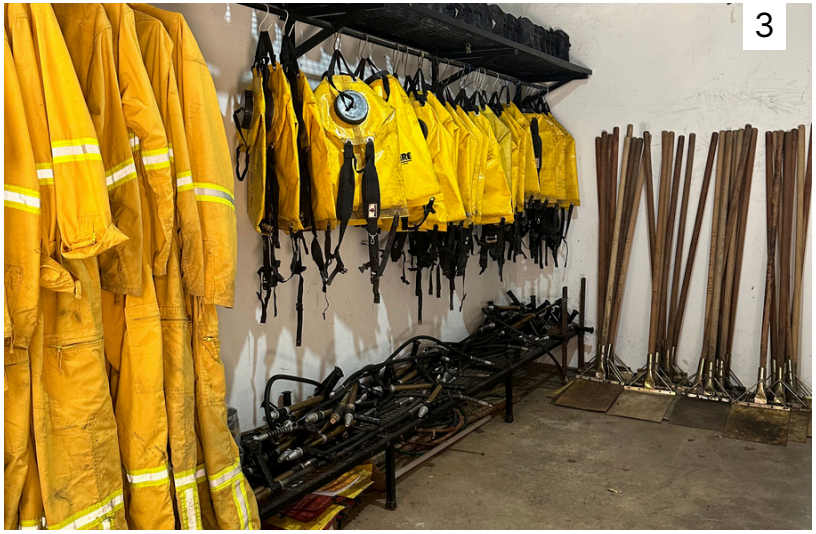




1 - Example of poorly healed pruning.
2 and 3 - Examples of correctly healed pruning. Photo: SVMA collection (CPA-G and DAU)







1 - Monitoring center at Córrego do Bispo Park. Photo: SVMA collection. 2 - Fire prevention poster. Photo: SVMA collection (CPA-G)
3 - Firefighting equipment at Anhanguera Park. Photo: SVMA collection (DGPU)





1 - Selective waste collection in Anhanguera Park. Photo: SVMA collection2 - Coleta de garrafas PET at Toronto City Park. Photo: SVMA collection (DGPU)

SOCIO-EDUCATIONAL STRATEGIES

202 Socio-environmental education
204 Environmental awareness sign
206 Artistic interventions for environmental awareness
208 Environmental artivism
210 Social engagement (co-creation)
212 Flora and fauna education

CITY HALL OF SÃO PAULO

Ongoing awareness-raising, training, and social mobilization initiatives that foster a connection between people and nature, strengthening care for the local environment and the adoption of sustainable practices.

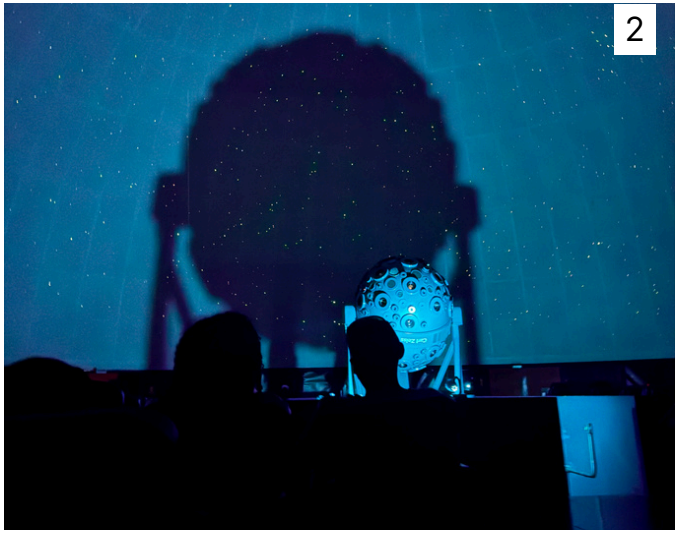
These initiatives can be implemented in various settings—such as schools, parks, local communities, and public facilities—through training programs and educational activities.

Includes:
- planetarium shows
- guided tours
- lectures
- workshops
- courses
- specialized courses
- hands-on activities



Did you know?

The PMEA Action Plan for 2025–2028 outlines concrete measures for implementing the Municipal Environmental Education Policy during the first phase of the Environmental Education Plan's implementation.





1 - Environmental Adventure Program at UMAPAZ.
2 - Session at the Parque do Carmo planetarium. 3 - Firefighting course.
Photos: SVMA collection (UMAPAZ and ASCOM)



Sign in Victor Civita Square. Source: SVMA collection (CPA-G)



Installation on Marginal Tietê, São Paulo, in 2023. Source: SVMA collection (CPA-G)



Butantã green corridor (footprints on the ground). Photo: Mila Maluhy



Collective action in the Butantã Green Corridor. Photo: Mila Maluhy

No longer:
- abandonment of domestic animals in green areas
- feeding, touching, and mistreating wild animals
- planting of invasive exotic species
- commercialization of native flora species from illegal extraction / trafficking



Abandoned cat in Independence Municipal Park.
Photo: SVMA (DFS) collection

REGULATIONS STRATEGIES

216 Environmental quota
218 Payment for environmental services
220 Transfer of Building Rights (TBR) without donation
222 Environmental tax benefits
224 Regulations for using zones in areas of environmental importance

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Provided for Land Use and Occupancy Law (LPUOS).

It requires that new constructions or major renovations contribute to environmental improvements on lots larger than 500m², with the aim of improving urban drainage and increasing vegetation cover. The project “earns points” by adopting different environmental solutions, which together must meet the minimum requirements for the lot.

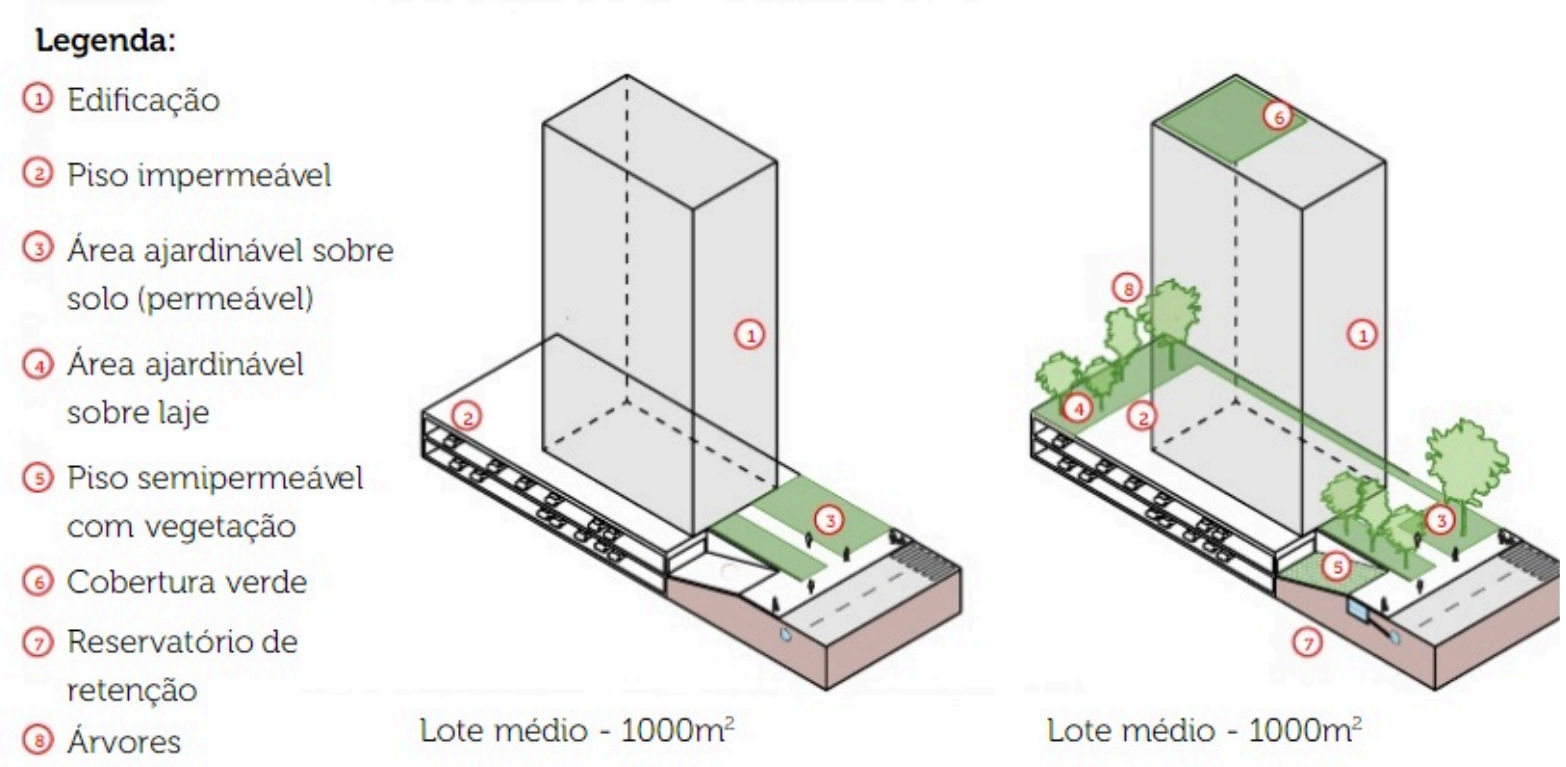


Image: https://gestaourbana.prefeitura.sp.gov.br/cota-ambiental-2/

Provided for in the MSP Master Plan, the PSA works as a reward paid by the City to landowners with preserved native vegetation for the “services” their land provides to the city - such as the production of clean water, the protection of springs, and the conservation of biodiversity - thus encouraging the protection and recovery of these ecosystems.

Currently underway in the water source areas (Guarapiranga and Billings reservoir basins) is the first pilot call for proposals for the PSampa program.



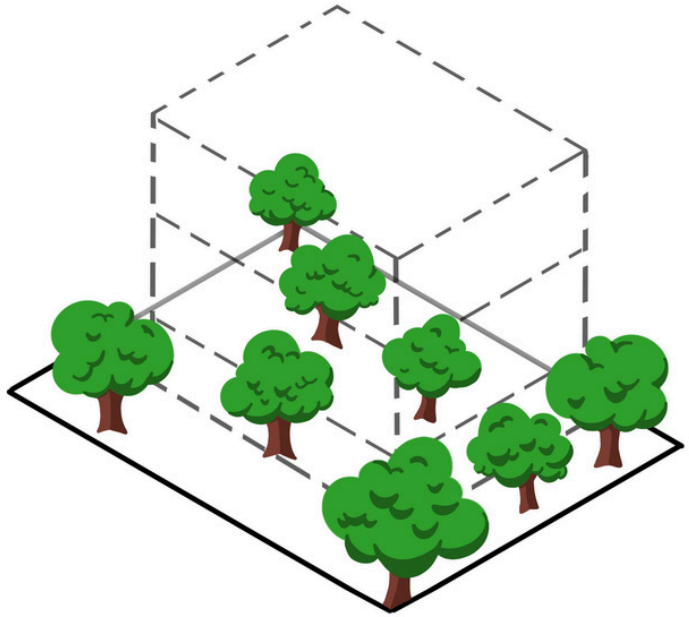
Did you know?

The PMSA is the Municipal Plan for the Conservation and Recovery of Areas Providing Environmental Services.



Image: https://gestaourbana.prefeitura.sp.gov.br/marco-regulatorio/plano-diretor/texto-da-lei-ilustrado/

Provided for in the MSP Master Plan, the TDC without donation is a compensation instrument that allows the owner to sell the construction potential to another plot of land in the city, in exchange for the preservation of listed areas (ZEPEC) and environmental preservation areas (ZEPAM),
which benefits society as a whole.



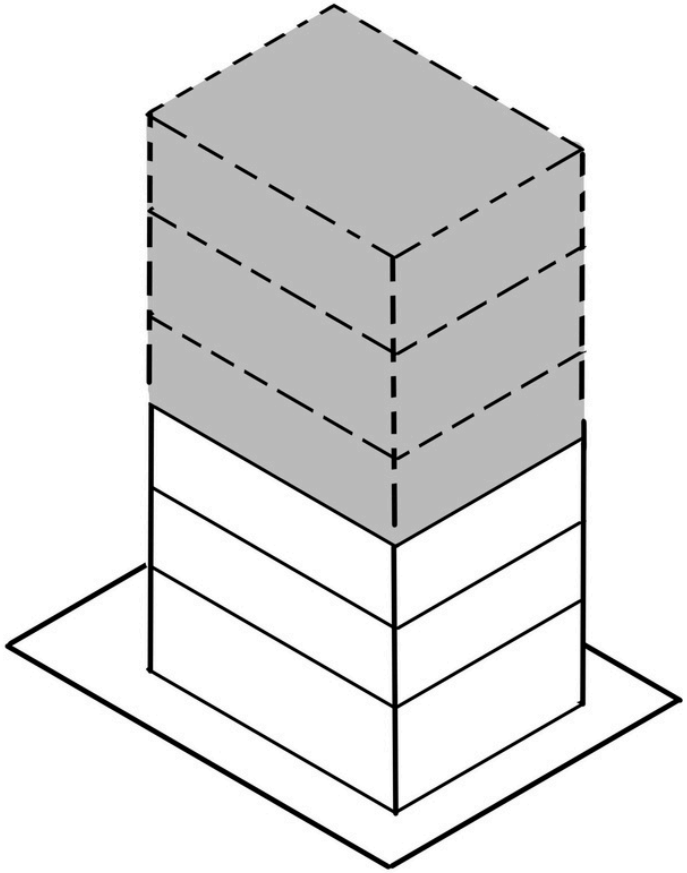


Illustration: SVMA collection
Reference: https://urbanidades.arq.br/2008/06/29/transferencia-do-direito-de-construir/

Property tax discounts

- Properties with tree vegetation, declared as permanent or perpetual preservation areas
- Land located in the Water Source Protection Area (ZEPAM)

Lei nº 10.365/1997, art. 17 e Instrução Normativa SF/SUREM nº 2/2023, art. 2

Environmental ICMS

- Set of environmental criteria for transfer of the municipal quota

Lei 17.348/2021, Decreto 66.048/2021, Lei 17.892/024

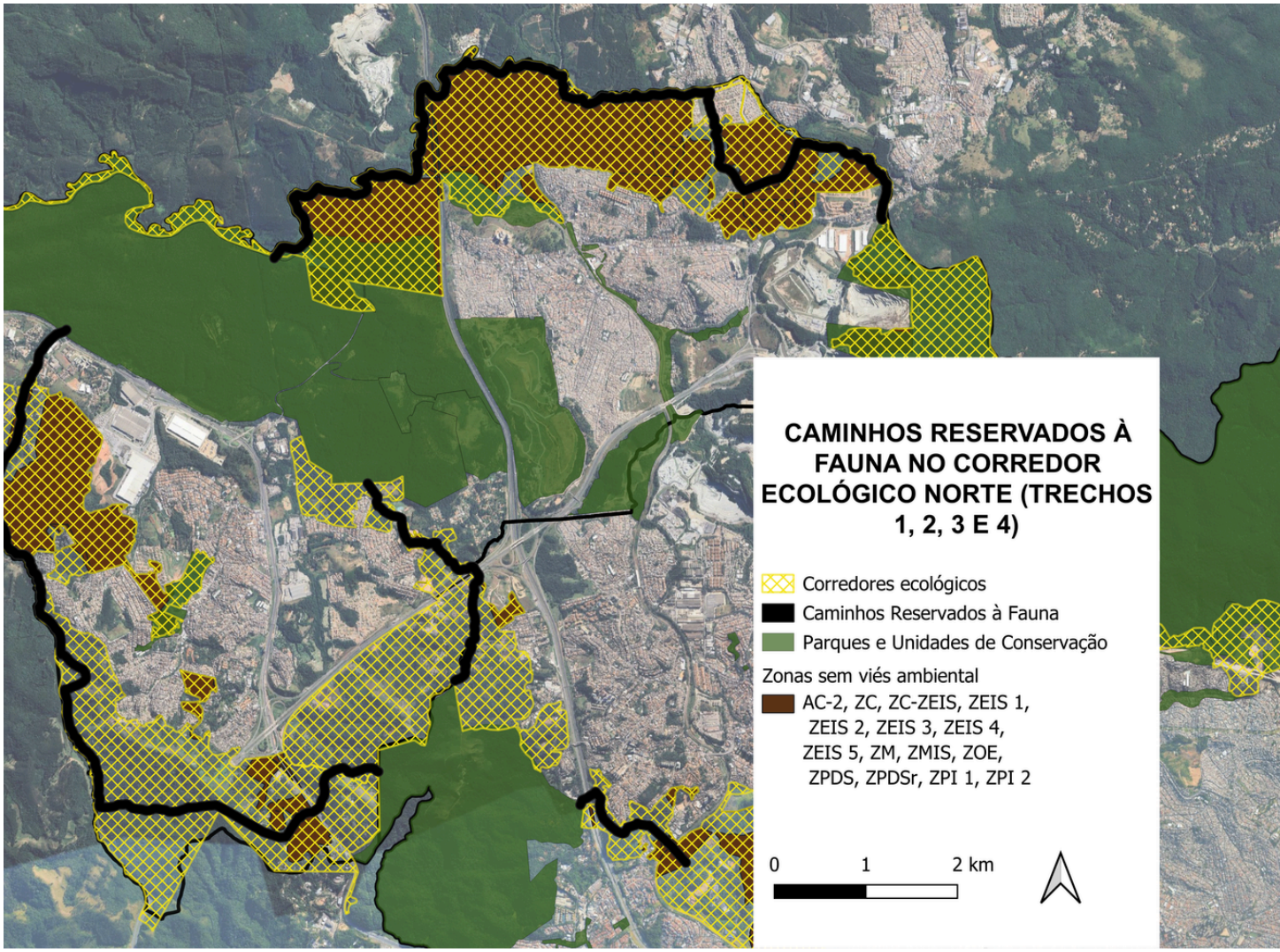
IPVA exemption for sustainable vehicles

Lei 18.065/2024



Illustration: SVMA collection

The areas of environmental relevance in the MSP overlap with areas of use without environmental bias, making it necessary to establish regulations that reconcile the intended use with their environmental relevance, such as the paths reserved for wildlife within the territory of the Northern Ecological Corridor.



Example of Regulation: Paths reserved for wildlife (Resolution No. 278/CADES/2024, dated October 16, 2024).
Map: SVMA collection (CPA-G)

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- in the forums where it was presented for debate
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