

INESUF

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Urban edges and arborisation across borders at the example of the franco-swiss Greater Geneva

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h e p i a

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Geneva Tourism official media library

écologie
& communauté

Based on an Interreg project : Urban edges and landscapes

- Lisières et paysages urbains



Interreg A France-Suisse 2017-2020

Axe 2 : Protéger et valoriser le patrimoine naturel et culturel

6.C : En conservant, protégeant, favorisant et développant le patrimoine naturel et culturel

PS4 : Préserver et restaurer les écosystèmes fragilisés de l'espace transfrontalier

Partenaires de réalisation :

CSTB Centre scientifique et technique du bâtiment (Marne la Vallée) :

Emeline Bailly, Sylvie Laroche, Jérôme Defrance, Maeva Favre, Alexandre Jolibois,, Christophe Martinsons, Coline Le Boniec

HEPIA Haute Ecole du paysage, d'architecture et d'ingénierie (HESO Genève) :

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Asters Conservatoire d'espaces naturels Haute Savoie :

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Partenaires de suivi :

Conseil d'Architecture, d'Urbanisme et de l'Environnement (**CAUE Haute-Savoie**),

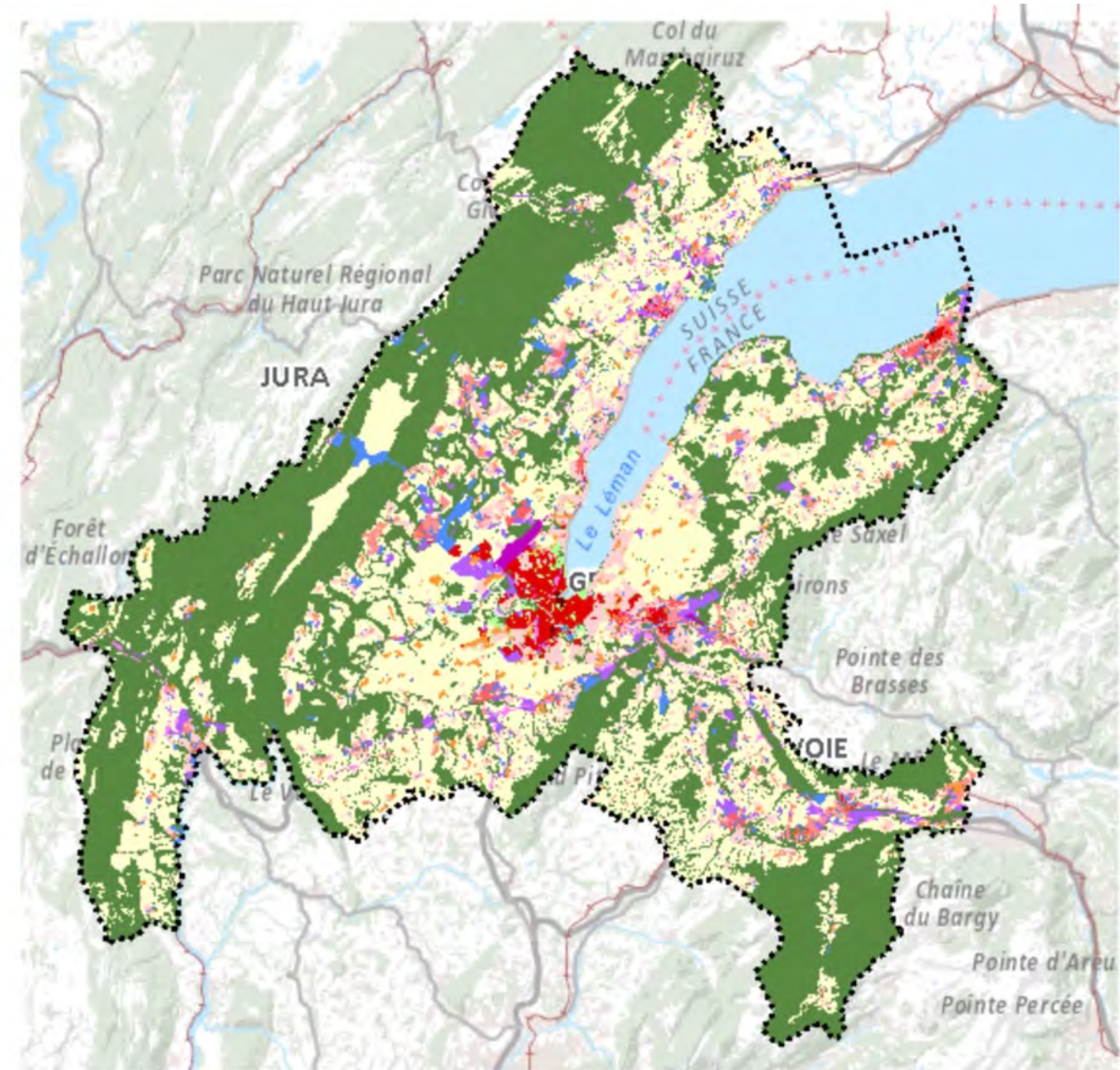
SM3A Syndicat mixte Arve d'aménagement de l'Arve et de ses affluents,

Direction générale adjointe infrastructures et aménagement du territoire du **Département de la Haute-Savoie**



- * State of the art (international) and definition of **urban edges**
- * For the transboundary **Greater Geneva**, methods to characterise their **urban, ecological and landscape qualities**
- * With the participation of regional and local actors **develop strategies** for cities to
 - **Recognize** urban edges as unique places and habitats
 - Integrate urban edges in urban **planning**, biodiversity, agricultural and climate policies
 - Conceive urban projects that protect, **create and restore** urban edges

https://www.etat.ge.ch/geoportail/pro/?mapresources=AGGLOMERATION_PLANS%2CAGGLOMERATION&hidden=AGGLOMERATION_PLANS&scale=300000¢er=2499000%2C1123000



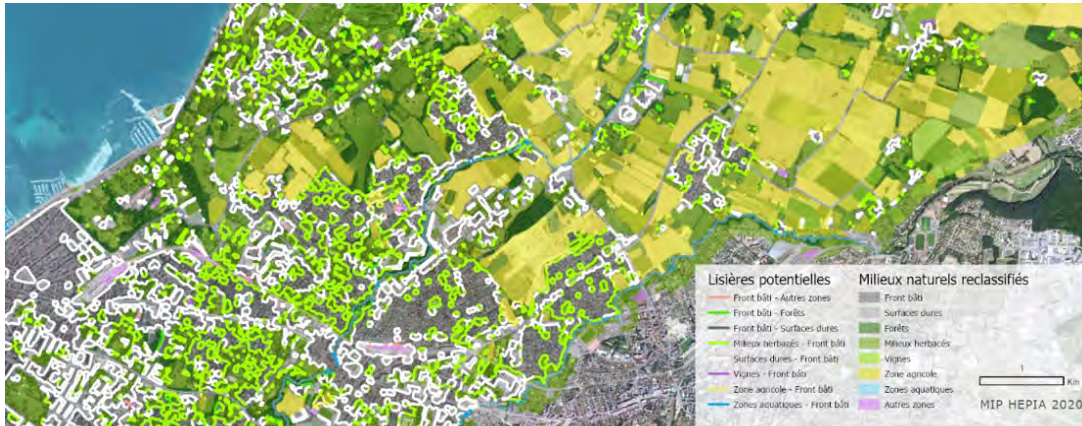
The Greater Geneva, a territory under great urban pressure

- One of the fastest growing metropolitan areas in Europe (over one million inhabitants).
- An increase rate of the number of homes of 1,3% yr. in the Swiss and 2,4% yr. in the French
- Important development of grey infrastructures
- What impacts on the green infrastructure and urban trees ?

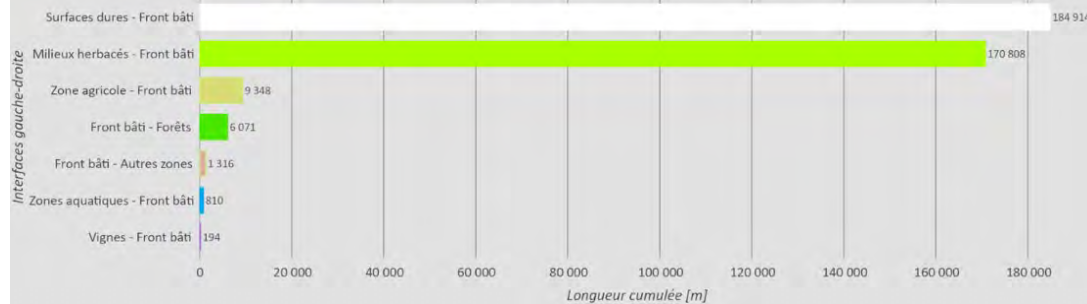
L'application cartographique «Évolution du paysage 2009 - 2013 - 2017» présentant les données sur tout le canton de Genève est disponible publiquement sur <https://arcgis.com/arcgis/1KmvDj0>



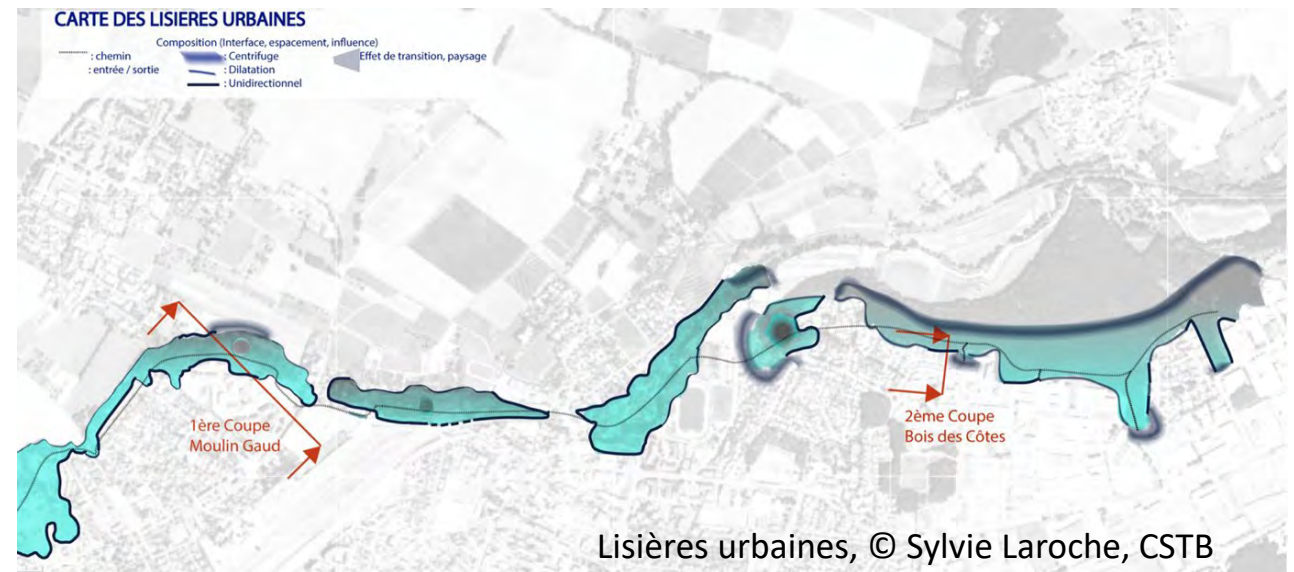
Interdisciplinary definition and characterization of urban edges



Longueur cumulée par type d'interface pour la zone affichée



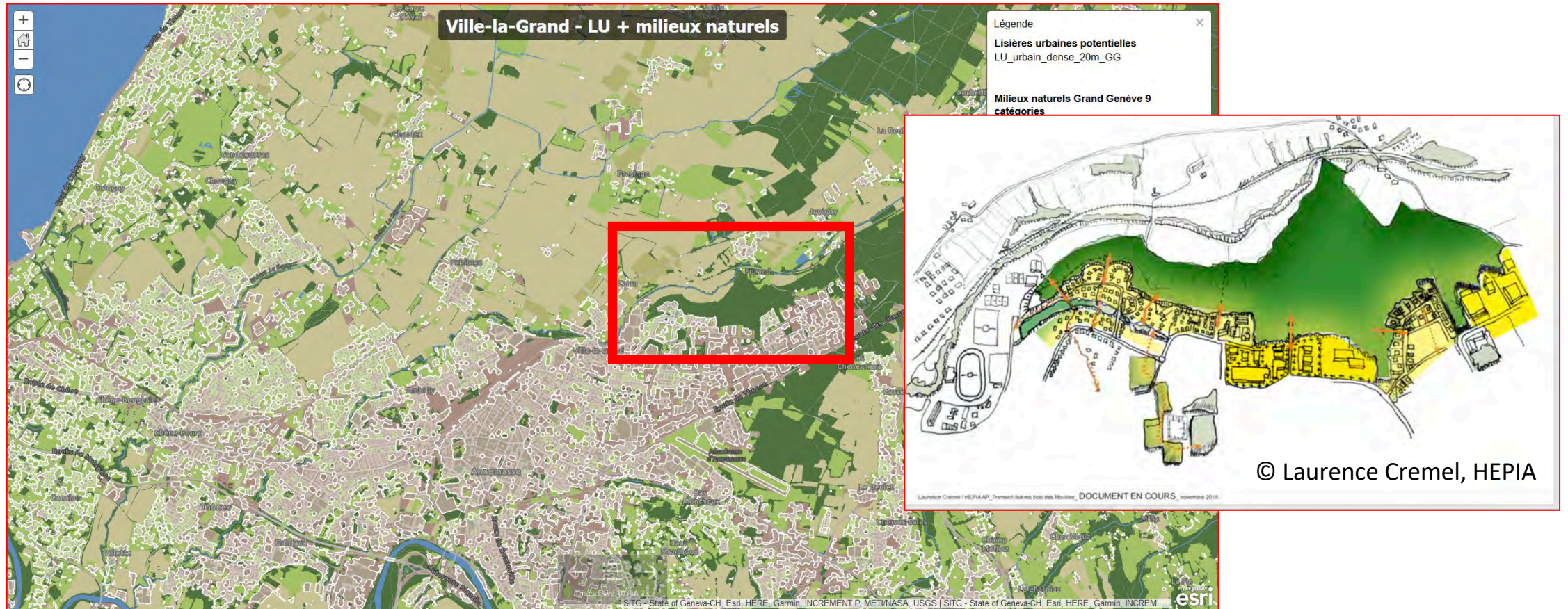
Alain Dubois, HEPIA, 2020



<https://storymaps.arcgis.com/stories/e901c494e39c434fa80120f3c545ff18>

Greater Geneva GIS representing potential urban edges

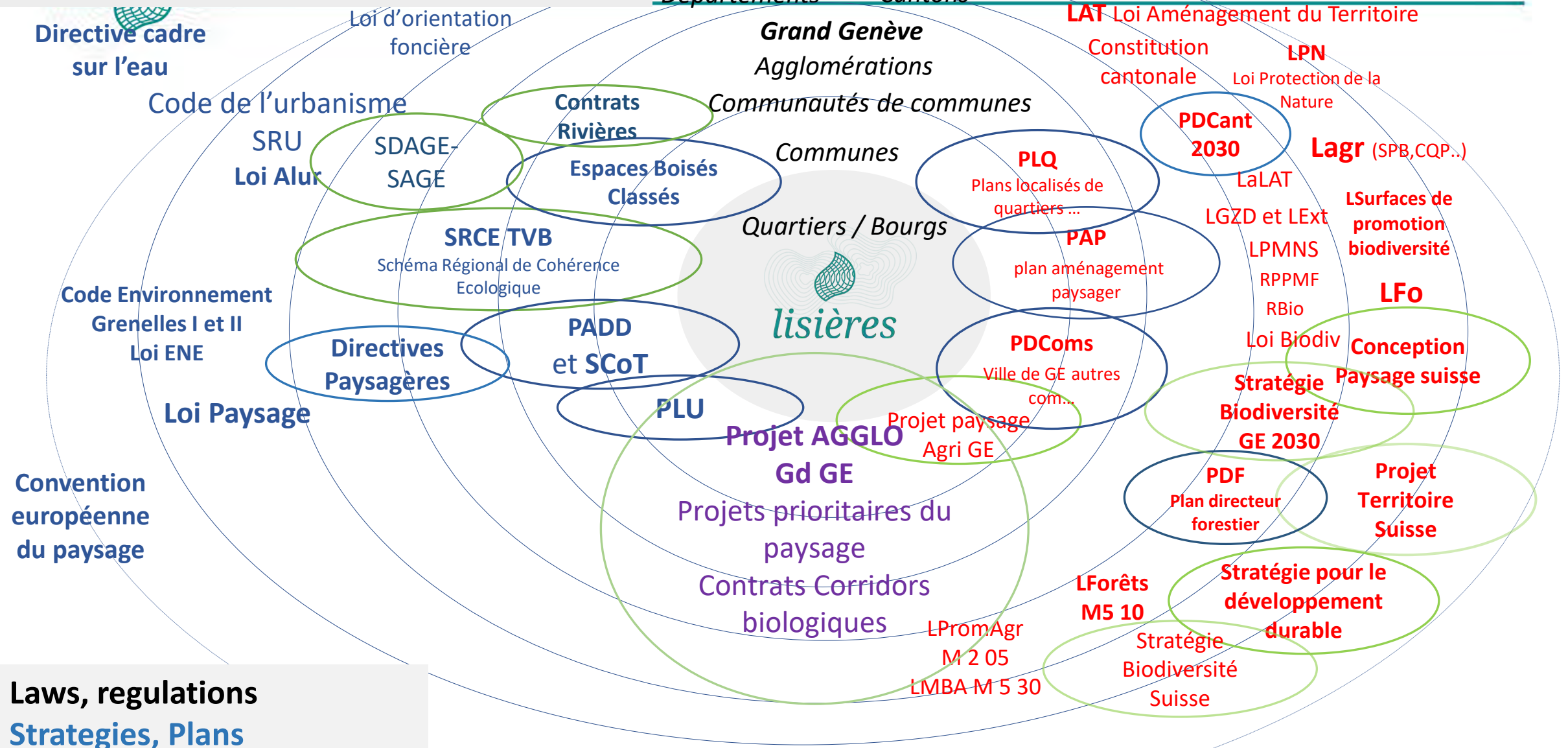
Zoom on urban edges



Carte web des milieux naturels du Grand Genève en 9 catégories de la région Arve-Lac Léman superposition des LU potentielles, source : OCAN 2020, géotraitement (A. Dubois, L. Martinez, HEPIA).

Urban edges in between and across borders

FOR THE GREATER GENEVA (Switzerland and France)

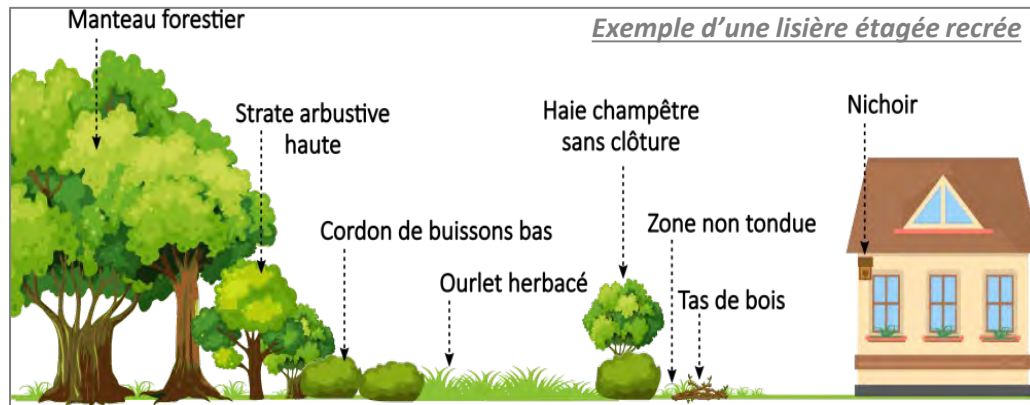


- **Laws, regulations**
- **Strategies, Plans**
- **Projects and Programms**

Sites of case study : Foron – Moulin Gaud – Cornière



Schéma d'urbanisation actuel.
Lisière urbaine Foron -Cornière,
Lisières urbaines © Laurence
Cremel, HEPIA



ASTERS, Lisières, Fiches actions, 2021

Different institutional
conditions - laws and
regulations to protect the
forest edge on the Swiss and
French sides.

Issues of urban edges:

Soils, vegetation and trees between built and unbuilt land areas often damaged



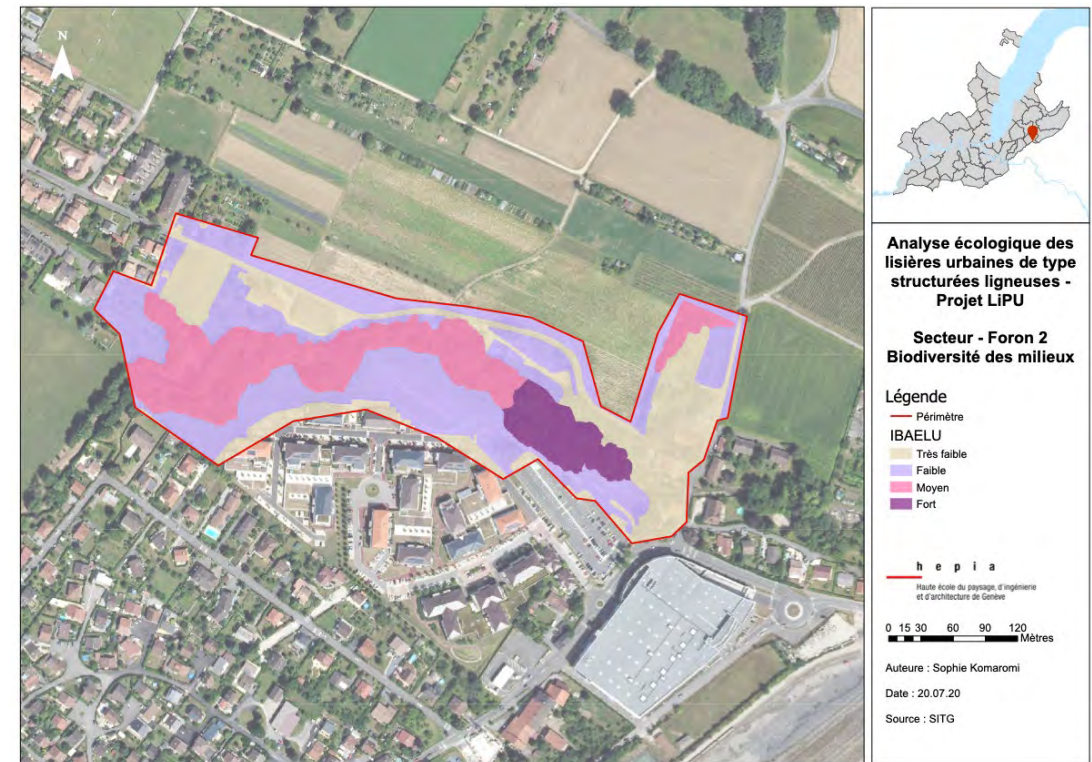
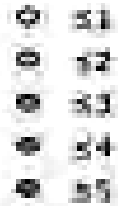
Urban edges are places where multiple land uses meet and often cause conflicts, with a potential loss of biodiversity, landscape values and other ecosystem services.



Convergences between the soil and ecological analyses



Score VESS



Soil structure quality of Moulin gaud area asses with VESS method, K Gondret, HEPIA, 2020

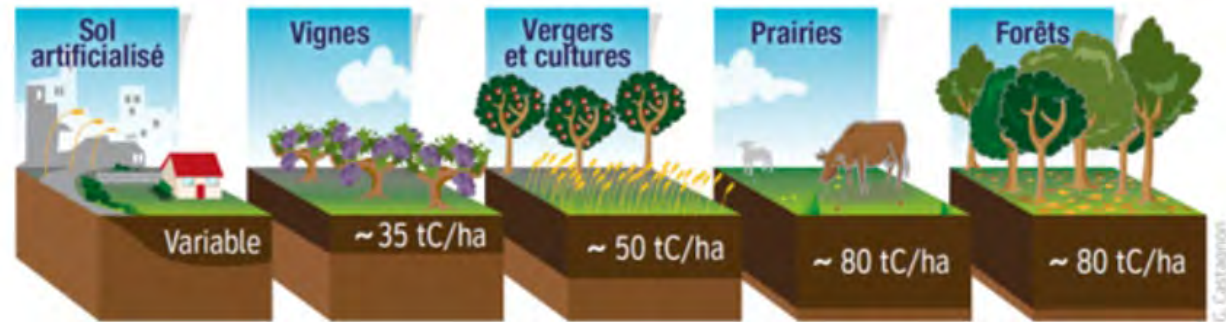
A method with indexes to assess the **biodiversity, naturality and connectivity** of urban edges map by S. Komaromi, 2020, HEPIA

This pedological study shows converging results with the 3 others ecologic indexes
For our sample : **Wooded land present the best biodiversity and soil structure values.**

Strategies for valuing the multiple qualities of urban edges and their soils

- * **Develop incentives that motivate stakeholders to adapt their land uses**
 - New policies for the payment by results based on ecosystem's quality, etc.

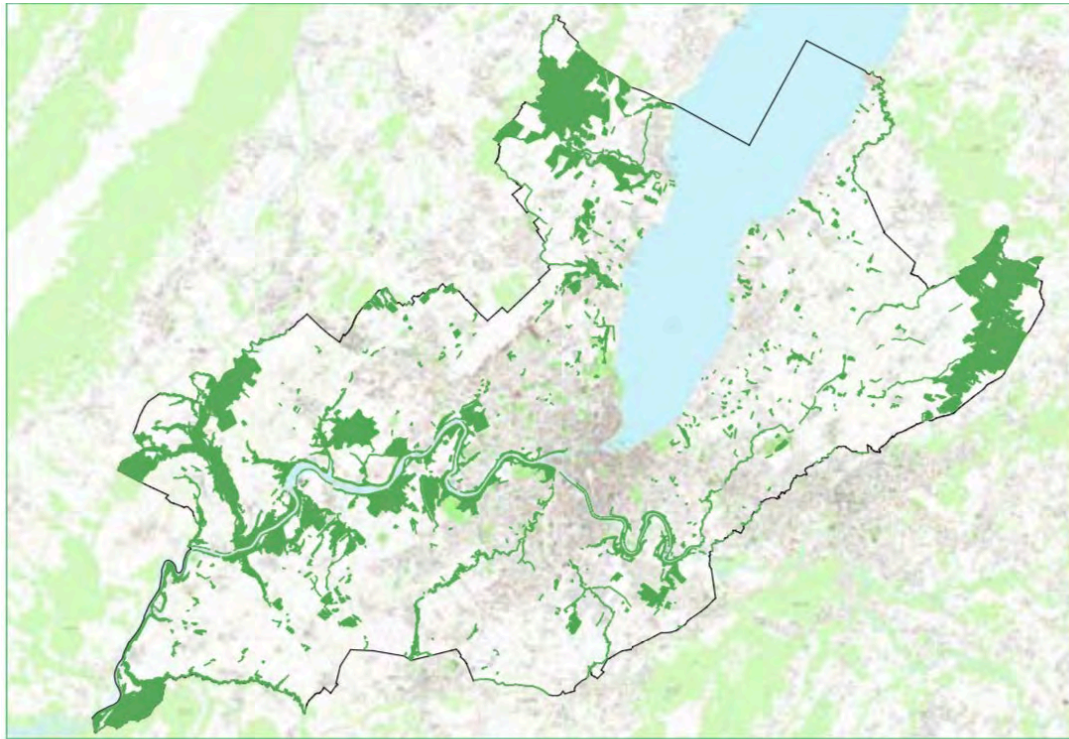
As confirmed by GIS sol (French soil program research) wooded areas contain more C/ha than other areas.
→ to compensate carbon emissions from cities, the protection of urban edges **with woods** is recommended.



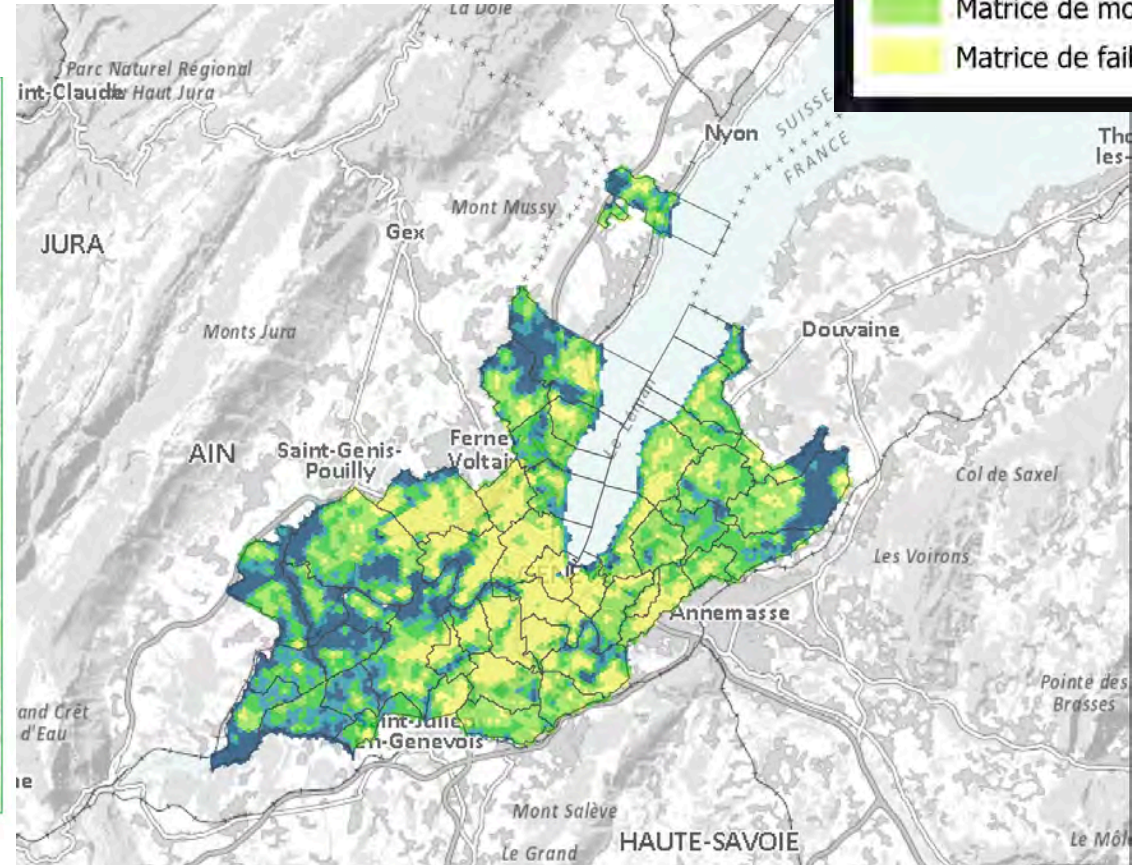
Estimation du stock de carbone dans les 30 premiers centimètres du sol - Source GIS sol

Forest ≈ Meadow > Farming ≈ Orchard > vine

Forests the greatest asset for biodiversity



Carte du cadastre forestier indicatif. Source: SITG



Geneva Green infrastructure

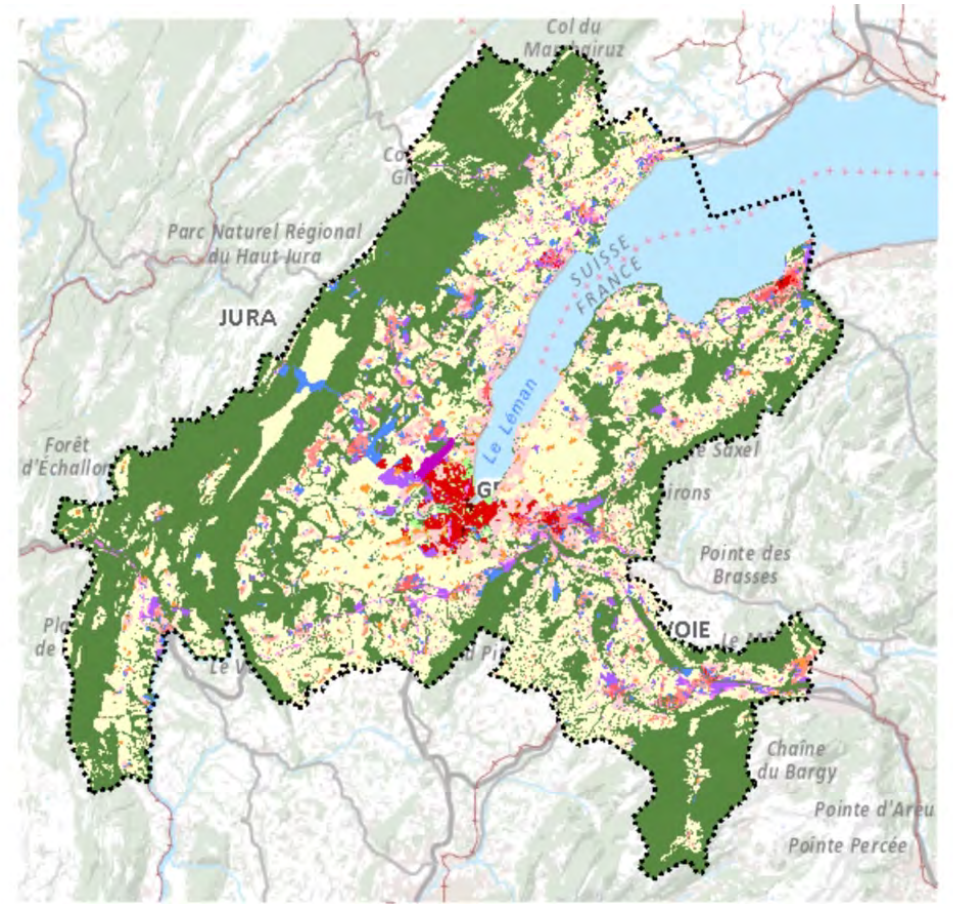
<https://storymaps.arcgis.com/stories/79cedcd51f4f410b8045817ab48e2c30>

Building on a cross-sectoral strategy and plan of action for biodiversity and strong public support the canton aims at augmenting its canopy from **21% to 30%**, but **where can trees be planted and grow?**

An **arborisation strategy** focusing on opportunities of urban edges to promote the ecological transition of metropolitan areas

Considering competition for space with

- ❖ **farming** (food security and sovereignty)
 - ❖ **urbanization** (demographic growth – urban densification and extension)
- Small forest patches, forested greenways, and urban street- and isolated trees, hedges and agroforestry, developed with the participation of local actors, will play a key role.
- ✓ Urban edges, in relation with the wider regional green and blue infrastructure, should be integrated in cross-sectoral metropolitan land use planning.





Thank you ...

and welcome to your questions and suggestions !

**Many thanks to the contributors of the Interreg project *Lisières et Paysages Urbains*
- *basis for this reflexion on the contribution of urban edges to the arborisation of the Greater Geneva***

Bailly E., Finger A., Fischer C., Laroche S. et.al. (2020). *Lisières et Paysages Urbains*. Rapport de synthèse Interreg VA France Suisse 2014-2020. CSTB, HEPIA, ASTERS.

<https://lisieresurbaines.wixsite.com/lisieres-urbaines>

