



**ZAN**

ZÉRO  
ARTIFICIALISATION  
NETTE

**ZNLT WORKSHOP**

**ENVIRONMENT / BIODIVERSITY  
REGIONAL PLANNING**

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## ZERO NET LAND TAKE: AN UNPRECEDENTED CHALLENGE

**URBAN SPRAWL HAS BEEN A GROWING CONCERN IN FRANCE FOR OVER FIFTY YEARS. IN RESPONSE TO ITS HARMFUL SOCIAL, ECONOMIC AND ECOLOGICAL EFFECTS, THE GOVERNMENT HAS RECENTLY SET A ZERO NET LAND TAKE GOAL. REGIONS INCLUDING ÎLE-DE-FRANCE (THE PARIS REGION) ARE SPEARHEADING EFFORTS TO ACHIEVE THIS GOAL AND DESIGNING EFFECTIVE SOLUTIONS.**

*The concept of “zero net land take” appeared in 2018 in the French government’s biodiversity plan. It is a goal that has been supported by the European Commission since 2011 with a view to ending the negative impact of cities on biodiversity and climate change. To clarify this objective and structure the ZNLT approach in the Paris region, the Institut Paris Region and the Île-de-France Regional Council are organising a series of workshops accompanied by summary reports (“Notes rapides”). You will find the workshop schedule on the next page.*

**T**he international scientific community is increasingly raising the alarm on issues relating to climate change, the loss of arable land, the collapse of biodiversity and their consequences on society (Giec, IPBES<sup>1</sup>). Groups of experts have identified land take as one of the main factors driving these threats and encourage major rapid change on a global scale in order to develop a development model allowing the ecosystem services<sup>2</sup> we rely on to continue to operate. Echoing these urgent recommendations, the Zero Net Land Take (ZNLT) goal aims to stabilise the level of land take in France in the near future.

### **NATURE CONSERVATION: A CENTRAL CONCERN**

In the framework of the ZNLT objective, the intrinsic value and the non-renewable dimension of the land is clearly stated. This observation marks a decisive step in raising awareness of the non-sustainability of the current planning model.

### *An objective forming part of the government’s biodiversity plan...*

The soil, and the biodiversity associated with it, supplies society with essential ecosystem services: carbon storage, production of food and bio-sourced materials, water purification, flood mitigation and climate regulation, the survival of the natural landscape, etc. ZNLT was first mentioned in the EC Resource Efficiency Roadmap<sup>3</sup>, but France began to focus on it in July 2018 and made it into one of the pillars of its governmental biodiversity plan. The Paris Region became actively involved by including ZNLT in its 2020-2030 regional biodiversity strategy adopted in November 2019. More than just controlling urban sprawl, the ZNLT objective now involves finding the means to restore the natural equivalent of any new land take footprint.

### *...to make up for the inadequacy of current solutions*

Though exceptionally ambitious, these recent strategies are part of a long history of struggle

Workshops jointly  
organised with



**L'INSTITUT  
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## LAND TAKE 2012 - 2017 ANNUAL AVERAGES

**France:** 25,982 ha./year  
according to land records.

**Île-de-France:** 840 ha./year  
according to the Mos [Mode  
d'Occupation des Sols];  
1,063 ha. according to land  
records.

## "ATELIERS DU ZAN" (ZNL WORKSHOPS) SCHEDULE

### #1 - 30 January 2020

"Zero net land take": definitions,  
challenges and responsibilities  
for the Paris region.

### #2 - 27 February 2020

Contained urban development  
without loss of natural habitat:  
methods and solutions.

### #3 - 26 March 2020

De-artificialising and  
ecologically restoring cities:  
immense potential.

### #4 - 30 April 2020

Can we rely on the "Avoid, reduce,  
compensate" sequence to  
achieve zero net land take?

### #5 - 28 May 2020

Towards frugality in the Paris  
region: the need for alternatives.

### #6 - 25 June 2020

"Zero net land take": obtaining  
monitoring tools that are equal  
to the task.

See the details of the workshops  
on the Institut Paris Region  
website: <https://bit.ly/2ThxGfV>

against urban sprawl that has been reaffirmed many times over the past decades. The SRU (2000), Grenelle II (2010) and Alur (2014) laws have gradually reinforced the role of local authorities in limiting the consumption of available space via their local planning documents. These measures have significantly contributed to reducing the rate of land consumption since the early 2000s and helped to disseminate principles of economic soil management. The Paris Region has led the field in this regard. Home to over 20% of the population of France within 2% of its total area, the Region has led ambitious schemes for many years, from the Plan d'aménagement et d'organisation générale (Padog) in 1960, which focused on the need to avoid the uncontrolled spread of the city, to the Schéma directeur de la région Île-de-France (Sdrif) in 2013, which provided a regulatory framework for the potential urbanisation of the region's communes (for a total potential area of 29,000 hectares by 2030, an average of 1,315 ha. per year)—but without including the concept of ZNLT.

This long-standing preoccupation with controlling urban development partly explains the more moderate rate of consumption of space in the Paris region compared with the rest of France and with respect to its population and employment figures. This rate of consumption is falling, and has been divided by four since the late 1980s, a time when urban land consumption was very intense. Despite this downward trend, which can be observed all over France, the Paris region continued to "take" an average of 840 hectares of land per year in 2012-2017. This means that achieving a ZNLT goal in the coming years remains conditional upon the implementation of effective regulatory frameworks, whether they concern urban development, fiscal policy or planning procedures. This is what is at stake in the forthcoming implementation of the ZNLT programme, whose accompanying measures and timeframes have still not been defined. Although the European Commission mentions 2050 as a horizon for achieving the ZNLT objective, certain simulations in France predict that it may be achieved by 2030. "Together with the stakeholders, we will define the timeframe for reaching the ZNLT objective and the manner in which it may be gradually achieved" (2018 Biodiversity Plan).

## A DEFINITION OF LAND TAKE THAT IS STILL SUBJECT TO DEBATE

In order to rapidly implement operational measures for the ZNLT objective, an ad hoc committee was set up in the summer of 2019 by the Ministers of Ecological Transition, Housing and Agriculture. Initial feedback from this committee shows how difficult it is to agree on a common vision, not only with respect to the resources that need to be deployed but also concerning the very definition of land take. This is a vital issue as the way in which the process of land take is understood will have a decisive impact on the entire ZNLT approach, especially as regards the scope of its ambition.

## What lexical field should be attributed to land take and its many implications?

Broadly speaking, "land take" refers to a change in status for land and covers all human activities that lead to a loss of the natural characteristics of land. This means that, in a way, farming is a form of land take. The term's most usual meaning, however, is the conversion of agricultural, natural or wooded areas for urban use. In the Paris Region, this conversion is identified by the Mode d'occupation du sol (Mos): the "Mode of Land Occupation".

However this definition has a number of limitations:

- It reflects a binary approach that groups together natural, agricultural and wooded areas, which are considered as non- taken, on the one hand and all other modes of land occupation, considered to be taken, on the other. This approach ignores the ecological value of urban parks and gardens, which it classifies as taken, as well as the ecological poverty of certain natural, agricultural and wooded areas that are polluted or have been stripped of their topsoil, which are classified as non-taken.
- This classification using land occupation databases does not allow the inclusion of qualitative criteria (degree of naturalness, state of conservation, etc.), which are vital for expressing the status of ecological functionality in an area.

## Taken/non-taken land: what principle of "interchangeability" should be adopted for areas of land?

With ZNLT, the idea is not to halt all new land take but to restore a natural equivalent for every new urban extension. In the Paris region, this would mean restoring the equivalent of 840 ha. of urbanised land annually (based on observations for 2012-2017). But this principle of interchangeability for taken/non-taken land is, in fact, barely operational because most impacts cannot be compensated for: the disappearance of natural land is an often irreversible loss and the formation of natural soil takes an extremely long time (several centuries) and involves natural processes (biological and climatic activity) that cannot be reproduced.

These points are all the more important because the implementation of ZNLT requires monitoring tools that are equal to the task. And while accurate measurement is conditional upon robust knowledge of land take and restoration processes, this indispensable requirement for any attempt at monitoring these processes is far from being met. The definition of terms, the establishment of scales of analysis and the use of appropriate measuring tools are all parameters that significantly influence the conditions under which the objective can be achieved, but there is currently a lack of consensus regarding these parameters.

## TOWARDS ZERO NET LAND TAKE IN THE PARIS REGION

Instead of waiting for ZNLT to be enshrined in law, it is now up to local authorities to implement it via their local planning documents.



### Regional authorities: the cornerstones of ZNLT

In the Paris region, planning initiatives have already produced important positive results in terms of reducing land consumption (see above). Technically, in the current regulatory framework there is nothing to prevent a planning document from achieving ZNLT. Regions are already laying the foundations for including the ZNLT objective in their regional planning, sustainable development and regional equality outlines (schéma régional d'aménagement, de développement durable et d'égalité des territoires or SRADDET), which are currently being drafted.

There seems to be broad agreement that ZNLT is a relevant goal, although at this very early stage in the conversation feasibility is still open to question, as is the issue of the scale on which it should be implemented. ZNLT envisions zero net land take on a national scale, but does that mean that every local administration has to follow the same rules? One thing seems certain: French communes [towns and villages] will not all be able to implement the ecological restoration /land take reversal processes required for the development projects they undertake. In a region such as Île-de-France, a large proportion of peripheral urbanisation is driven by metropolitan, not local factors, and it should not be up to local authorities to compensate for it. The question of solidarity between administrative areas is both a necessary condition for ZNLT and a colossal challenge.

### Combining urban consolidation with green space conservation

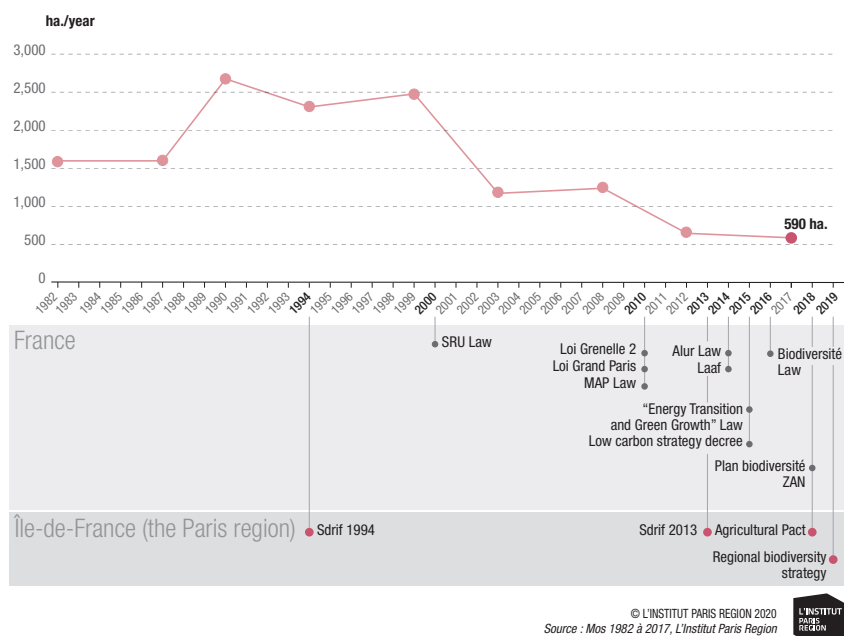
The means to be used in order to achieve ZNLT in the Paris region require different levels of intervention. Urban consolidation in Paris and the polarities of the outer suburbs is necessary to avoid encroaching on natural and agricultural areas. But it must be supported by a discussion on the integration of built forms into the urban landscape; failing this, local residents are likely to reject it.

Moreover, the success of new projects relies on conserving existing urban green spaces and developing them in areas where they are lacking. Their presence is essential both for the wellbeing of the people who live there and for the ecosystem services they provide (urban cooling islands, soil de-sealing, water management, ecological continuity, etc.). Work thus needs to be done in order to categorise the different types of urban fabric according to their ability to absorb urban consolidation.

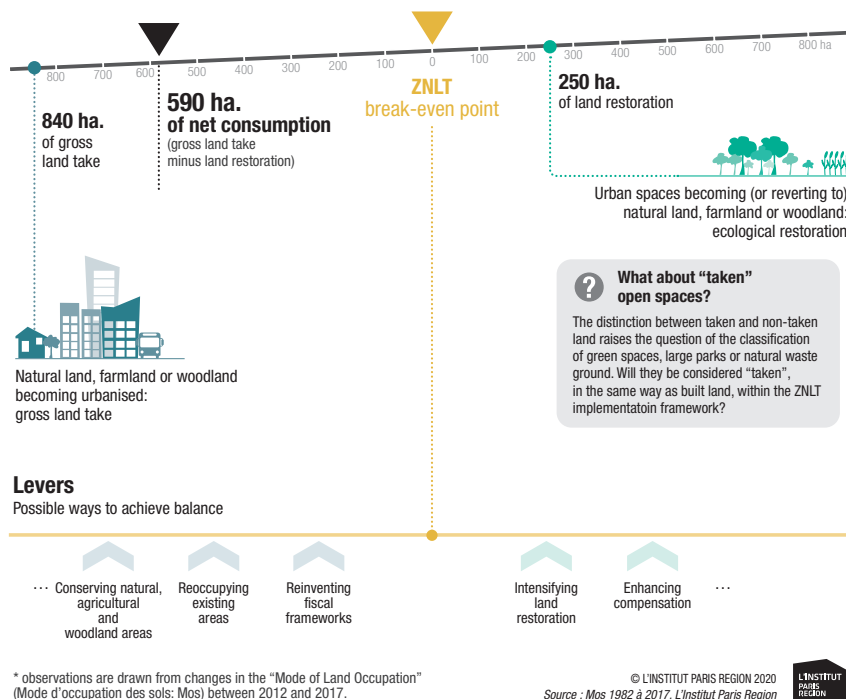
### Land restoration

When urban consolidation is impossible and natural, agricultural or wooded areas have to be used to meet housing or other needs, ZNLT allows land take to be reversed, as suggested by the word "net". But restoring urban areas to their natural state raises some important questions. It most often involves demolition, decontamination and soil restoration, all of which are very costly, and moreover there is no guarantee that ecological functionality can be restored.

## Annual net consumption of natural, agricultural and wooded areas in the Paris region



## Understanding Zero Net Land Take (ZNLT) in the Paris region\*



### In-depth review of compensation procedures

A range of compensation measures exist depending on the areas concerned (agricultural, woodland, ecological). They operate within different regulatory frameworks and may interfere with one another. The "big project" approach that currently prevails where ecological compensation is concerned is indispensable, but remains perfectible. The "avoid – reduce – compensate" sequence introduced

by the 1976 Nature Conservation Act and reinforced by the August 2016 Biodiversity Act aims at “an absence of net loss, or even a gain, in biodiversity”. Despite this, not all projects undergo environmental assessment and the quality of such assessments is sometimes questionable. The ZNLT objective requires taking into account all development projects, big or small—since land take can have a diffuse or even indirect effect (the “butterfly effect”)—and improving coherence between current compensation procedures. This paradigm shift invites us to rethink the very notion of compensation and the role we want it to play.

### *The emergence of a new model for society*

Pursuing the ZNLT objective makes it necessary to adjust our modes of production and consumption, which are still not very compatible with local capacities and resources. Initiatives aiming to achieve more frugality are to be encouraged in order to move towards a development model that is mindful of the limitations of ecosystems. In addition to land use, frugality is required in terms of materials, energy consumption, use of resources and treatment of waste in a region where impacts extend well beyond administrative boundaries. Given the scope of the changes required to achieve zero net land take, our collective ability to provide several complementary, cross-sectional responses is being put to the test. Ambitious implementation of the ZNLT objective depends on the effective coordination of all the stakeholders involved in order to protect and conserve biodiversity, to support the resilience of local areas, and to ensure the wellbeing of their inhabitants. ■

**Thomas Cormier**, planning expert  
Planning department (*director: Sandrine Barreiro*)  
**Nicolas Cornet**, ecologist  
Environment department (*director: Christian Thibault*)

## RESOURCES

- Adam Muriel, Cormier Thomas, Gobled Laurie, “Vers un développement urbain raisonné et durable”, *Note rapide*, n° 797, L'Institut Paris Region, January 2019.
- Cormier Thomas, Delaville Damien, Hawi Lina, “La densification cachée dans les dynamiques de construction en Île-de-France”, *Note rapide*, n° 821, L'Institut Paris Region, October 2019.
- “Cities Change The World”, Les Cahiers, n° 176, L'Institut Paris Region, September 2019.
- Mariasine Léo, Vialleix Martial, “Villes et territoires circulaires : de la théorie à la pratique”, *Note rapide*, n° 822, L'Institut Paris Region, November 2019.
- Mariasine Léo, Vialleix Martial, “Vers une approche métabolique des espaces urbains”, *Note rapide*, n° 823, L'Institut Paris Region, November 2019.

1. Groupe d'experts intergouvernemental sur l'évolution du climat/Giec, Plateforme intergouvernementale sur la biodiversité et les services écosystémiques/IPBES.
2. Ecosystem services: goods and services that humans can derive from ecosystems without having to act upon them.
3. European commission roadmap: <https://fr.welcomeurope.com/news-europe/une-feuille-route-une-utilisation-plus-efficace-ressources-14896+14796.html>

#### **PUBLISHER**

Fouad Awada  
**HEAD OF COMMUNICATION**  
Sophie Roquette  
**LAYOUT DESIGN**  
Jean-Eudes Tilloy  
**GRAPHICS/CARTOGRAPHY**  
Laurie Gobled  
**PRODUCTION**  
Sylvie Coulomb

#### **TRANSLATION**

Martyn Back  
**MEDIA LIBRARY/PHOTO LIBRARY**  
Inès Le Meledo, Julie Sarris  
**MEDIA RELATIONS**  
Sandrine Kocki  
33 (0)1 77 49 75 78

#### **L'Institut Paris Region**

15, rue Falguière  
75740 Paris Cedex 15  
33 (0)1 77 49 77 49  
  
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