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Living in the gaps. The social dynamics of spontaneous vegetation in Brussels

Vivre dans les interstices. La dynamique sociale autour de la végétation spontanée à Bruxelles

Leven in spleten en kieren. De sociale dynamiek rond spontane vegetatie in Brussel

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AUTHOR'S NOTE

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Introduction

1 Urban nature takes many forms – plant, animal or mineral [Bourdeau-Lepage, 2019: 904]. It appears both in carefully managed spaces and in neglected corners of the city [Brun *et al.*, 2017] such as gardens, green spaces or abandoned industrial sites. Yet it also emerges in the smallest cracks of the built environment. On pavements and stone walls, wild grasses and untamed greenery find a foothold [Lizet, 1989]. This form of non-domesticated vegetation is the subject of this article. Rather than cataloguing it – as botanists have done for centuries in studies of urban flora [Mathis, 2022; Machon *et al.*, 2022] – our aim is to approach it from a microsociological perspective within the urban context of Brussels.

2 We consider that life emerging in gaps in the city poses a "problem situation" in terms of biodiversity protection. From the standpoint of public policy and citizen action, should such vegetation – sometimes viewed as invasive or even harmful – be eradicated, or allowed to thrive? We have studied this specific situation within a broader research initiative (the CRIM-BIODIV project[1]), alongside other instances of actual or potential harm to biodiversity, such as an industrial facility built in a natural area, the conversion of permanent meadows into Christmas tree plantations, water pollution from urban sewage, problematic hunting practices, etc. As criminologists, our interest in these environmental issues stems from a straightforward observation: biodiversity is being harmed without any coherent criminal policy designed to protect it. In Belgium, this state of affairs is intensified by the complex institutional structure, which has led to the regionalisation of most environmental competences. Yet climate change and the COVID-19 health crisis highlight the need to pay attention to essential elements related to biodiversity, such as the vital need for natural spaces and urban plant life, a more equitable spatial distribution of these spaces, citizen awareness, attitudes of compliance or resistance to norms, and the leeway granted to stakeholders responsible for sanctioning breaches.

3 Our research therefore focuses on the human (in)actions which damage nature, guided by the core premise of environmental criminology: crimes[2] against nature are frequent, serious and rarely punished [Salle, 2019]. We adopt a field-based approach, observing practices and individuals concerned up close in order to understand how attention to biodiversity – and the meaning attached to its defence – is constructed. Our perspective aligns with a criminology of social reaction: rather than asking why or how humans (or society at large) destroy the environmental balance, we ask how they respond to this destruction [Scheer, Mahieu and Jonckheere, 2024].

4 In the Brussels-Capital Region, responsibility for vegetation policy is shared between municipal and regional authorities. They contribute to plant management through the upkeep of public spaces, the development or redevelopment of these spaces, special conditions imposed when issuing permits, public information, support for specific projects, etc. Citizens also play a role, through individual or collective initiatives – some formal, others informal – often supported or initiated by local environmental associations[3], sometimes in partnership with the Brussels public authorities. The creation of vegetable and flower planters, the greening of facades and planting around tree bases are just some of the examples of citizen action in support of urban greenery in Brussels[4].

5 One such initiative caught our attention: "Fleurs de trottoir" (since 2020), an initiative closely linked to the "Belles de ma rue" botanical discovery walks (since 2018). "Fleurs de trottoir" is an awareness-raising project organised by a public authority (Bruxelles Environnement) and two associations (Natagora and the Centre d'Écologie Urbaine). It consists in organising guided botanical walks in all of the municipalities of Brussels, focusing on the wild plants which grow spontaneously in the city. Participation is free of charge, limited to around 15 participants, each of whom receives a "plant booklet" allowing the identification of 25 plants frequently found on Brussels pavements[5]. Plants often dismissed as "weeds" are here reframed as indicators of environmental health, especially since the ban on pesticide use in public spaces.

6 As we walk through the city, we brush against them and trample them. These flowers and plants are still largely perceived as nuisances which spoil the city and the urban

landscape. To understand the actions and inactions surrounding them, we participated in one of the citizen walks organised as part of the “Fleurs de trottoir” project. Through this field experience, we adopted a relational, micro-social approach to observe how people pay attention to biodiversity, the meaning attributed to its protection or the public's awareness of it.

The case study as a lens for scientific analysis

7 Our study of spontaneous vegetation in Brussels – conducted mainly through the “Fleurs de trottoir” citizen walks – forms part of the wider CRIM-BIODIV research project: as mentioned in the introduction, we have analysed so-called problematic situations arising from the coexistence of human and non-human life in the same territory. Among the fifteen case studies completed, this awareness-raising initiative was chosen due to its urban character, its emphasis on education as a primary tool for action, and the spatial planning issues it raises within Brussels.

8 For each of the cases studied, our methodological approach first consisted in identifying and reviewing the media, administrative and legal traces of the situation; then, in mapping the stakeholders involved and conducting interviews with key participants in order to understand their perceptions; and finally, in observing the action directly in the field. Documentary analysis drew on grey literature concerning this particular awareness-raising campaign and on other greening projects in Brussels (brochures, websites). We then conducted in-depth interviews with three local officials: two “Fleurs de trottoir” project coordinators – one municipal (Manager 1) and one regional (Manager 2) – and a third person responsible for urban (re)greening initiatives at municipal level (Manager 3). We also joined one of the walks ourselves as ordinary citizens[6] in one of the municipalities of Brussels. This material allowed us to interpret the interactions surrounding spontaneous vegetation in Brussels, to reveal the emotions and representations which accompany them, and to situate these within local knowledge [Sabourin, 1993] and the broader context in which such awareness-raising efforts emerge [Hamel, 1998].

9 Although limited in scope, this case study illustrates how the status of “weeds” in the city reflects social dynamics shaped by three observable dimensions. First, an emotional dimension[7], in which spontaneous vegetation must accommodate the differentiated emotional charge borne by each living species, some receiving more attention than others. Action around spontaneous vegetation thus aims to create a connection, mobilise attention, generate empathy or sympathy – in other words, to move people emotionally in order to preserve life (*1. Emotional dimension*). Next, a cognitive dimension, whose aim is to strengthen citizens' knowledge (e.g. plant identification skills) in order to foster acceptance of urban vegetation, in particular through awareness-raising actions (*2. Cognitive dimension*). Finally, a utilitarian dimension, whereby the acceptance of nature in the city (in this case, spontaneous vegetation or otherwise) seems to correlate with the image of nature as being useful to humans (reducing urban temperatures, allowing soil permeability, etc.) (*3. Instrumental dimension*). Our study shows that the social dynamics surrounding spontaneous vegetation in Brussels evolve according to these three dimensions, which are at the heart of the work of those responsible for campaigns to protect and promote

spontaneous vegetation, and are reflected in their words and the awareness-raising tools they have put in place.

1. The emotional dimension

10 "Awaken people's emotions": within the regional administration, the objective of the "Fleurs de trottoir" awareness-raising project is clearly stated, with the desired result being to "make people want to stop pulling up all the plants" (Manager 2). The behavioural change sought here relies not on threat or sanction but on gentle persuasion. This is the "nudge" approach [Thaler and Sunstein, 2008; Flückiger, 2018]; the strategy is to inform citizens and appeal to their sensibilities so that they make better choices on their own. The awareness-raising at the heart of the "Fleurs de trottoir" project thus aims to change the way people look at things, by enabling them to see (future) flowers in spontaneous vegetation, even if they are "pavement flowers".

> When we see plants in the pavement or at the roadside – what people call weeds – it's not always the case. And booklets like this [author's note: reference to the "plant booklet" given to each person taking part in the "Fleurs de trottoir" walk] help people realise that flowers grow there too. That's the message we need to get across.
> Manager 1, municipal administration, 05/10/2022

11 The awareness-raising process calls upon emotions regularly. During the urban walk we took part in, the description of a fragile natural environment, requiring special protection, was emphasised immediately. The guide compared ecological collapse to a spider's web: "If we press too hard on it, it breaks." The same approach is taken to suspend the (often thoughtless) act of pulling up "pavement flowers": the aim is to encourage citizens to name and recognise these plants – to acknowledge their identity and, by extension, their right to exist. Recognition evokes empathy: a named plant is less likely to be destroyed. By appealing to emotions, such initiatives move people from indifference to attentiveness[8]. Psychologist-criminologist C. Debuyst noted that our understanding of reality is filtered through emotion; our relations to the world oscillate between defence, attraction and sympathy, giving rise to "psychological mechanisms which determine how the valued object is seen or known" [Debuyst, 1985: 27-28; see also Adam and Englebert, 2016]. Knowing a living species means acknowledging its identity – a first step towards acceptance and even protection. Species conservation is closely linked to the emotions they arouse. Building on this idea, researchers at the University of Hasselt are compiling databases on how humans perceive plants and animals. While the perception of plants remains largely unexplored to date, the perception of animals has already been the subject of various studies – even though the charisma of mammals is better documented than that of other vertebrates such as birds or fish, and even more than that of invertebrates [Nguyen *et al.*, 2023]. The study conducted by the Hasselt team evaluates each species along six traits: familiarity, visual impression, beauty, threat status, importance to humans and ecological importance. By encouraging the public to share their perceptions of such species, the study, which is still ongoing, aims to better understand perception bias and guide nature conservation strategies[9].

12 The link between the emotions aroused by a species and its protection is well understood by the organisers of these urban walks:

> These walks allow us to say, “This little plant looks quite ordinary, but in reality, it's a medicinal plant”. Explaining its usefulness – also for biodiversity – changes how people see it. That was our aim too: to make residents want to keep – not tear out – what grows in front of their homes. Or at least not necessarily everything that grows!
> Manager 2, regional administration, 04/10/22

13 Curiosity, surprise, the pleasure of discovery, concern for fragility, the hope of saving a plant: such emotions arise naturally during these walks.

14 Moreover, the walks amplify their reach: they engage not only registered participants but also passers-by drawn to a group intently observing a seedling emerging from the pavement. On several occasions, our group became larger as these onlookers joined, producing a snowball effect of knowledge and emotions. The walks also highlight shared ownership of public space, resonating with other local projects such as the “small, brightly coloured planters managed entirely by local youth” (Manager 1). These efforts sustain city dwellers’ connection to nature, helping to avoid the disconnection which reduces their ability to identify living species and, consequently, their actions to protect them [Bashan *et al*., 2021]. A municipal official in charge of greening projects (Manager 3) further emphasised that, with such initiatives, “you can already help many species live – or survive – within the municipality”.

2. The cognitive dimension

15 Recognising plant life as legitimate is just one step in the process of urban greening: public authorities and associations – including those we met during this case study – are also working to convince citizens to take an active role, by getting involved in their own neighbourhoods. The projects are many and varied, and also aim to create bonds between residents: “Involving local communities in the design and management of green spaces fosters a sense of belonging and encourages people to use them”[10]. Action here is collective; it encourages initiative, facilitates exchange and develops individual skills and knowledge in biodiversity protection. Shared gardens illustrate this logic well. Designed to strengthen local social ties, they enable residents to experiment with growing food or ornamental plants and to take part in practical workshops (square-bed gardening, insect-house building, etc.). The “Fleurs de trottoir” campaign is part of a wider process aimed at getting people involved in greening projects. Yet such projects succeed only through compromises which take everyone’s perceptions into account. Those in charge of greening projects described to us the delicate balance they must maintain. Leaving some areas unmanaged – allowing nature to unfold freely – often generates complaints from residents who see this as municipal neglect of public spaces. “Weeds” are equated with filth, “something which detracts from the cleanliness of the city” [Menozzi, 2007: 148]. A bioengineer employed to develop green spaces in one municipality (Manager 3) observed that his scientific expertise is underused: his work consists less in making the city hospitable to nature than in making nature acceptable to the city’s inhabitants. To do so, he relies on clear signage to provide information, delimits wasteland areas and restricts their size, and ensures the aesthetics of green spaces and marks access to them.

16 Spontaneous vegetation is not the only life flourishing in these urban spaces; animals also thrive there. “Pavement bees” have been studied in the municipalities of Brussels

[Noël *et al.*, 2022; Pauly, 2019]. They build nests beneath pavements, leaving small mounds of sand as traces of their activity. A Bruxelles Environnement study was conducted with the participation of citizens who were asked to draw up a census of nesting sites. The research led to recommendations for spatial planning: "The most workable compromise is to maintain pedestrian comfort along façades – where people naturally walk – while creating, at the edges of these areas, structures more favourable to bee nesting. Another solution is to create and/or maintain a planted strip along the edge of the pavement" [Smets and Van Damme, 2021: 6][11].

17 Allowing life to inhabit these spaces – whether plant or animal – depends as much, if not more, on social factors such as public acceptance as on technical or ecological ones [El Jai and Pruneau, 2015]. Our study is limited in scope and cannot capture the differing impacts of an awareness-raising campaign such as "Fleurs de trottoir", since perceptions vary across social groups[12]. Other research shows that tolerance towards "weeds" tends to be greater among younger people and middle- or upper-class residents, for whom wild growth conveys "an idea of naturalness which offsets the formality of concrete"[Menozzi, 2007: 149].

18 Public education about spontaneous vegetation also relies on visual and cultural tools presented in shared spaces, for example, Catherine Wielant's film "Mauvaises herbes" (2013), which parallels graffiti blossoming on walls in Brussels with plants emerging from concrete slabs[13], or exhibitions featuring photographs of urban wildlife such as foxes and sparrows[14].

> "It shows all the small animals we can come across, and sometimes we don't realise how many live in cities. And the coexistence: they come to our windows, they live in our houses."
> Manager 1, municipal administration, 05/10/22

19 Like "Fleurs de trottoirs", visual devices and other representations are used to showcase the plant and animal species which make up nature in the city as part of a biodiversity awareness campaign. An analysis of trends in the presentation of biodiversity in museums, zoos and environmental centres[15] groups these initiatives under the triptych "make known, make understood, give rise to action" [Quertier and Girault, 2010: 49]. One of the managers responsible for urban greening initiatives (Manager 1) explained: "The real challenge is getting city dwellers to understand that the city doesn't belong only to them – that's where awareness efforts really matter". The very notion of a city implies the idea of cohabitation, for "what makes a city – its urbanity – derives not only from human populations but also from the arrangement of non-human elements such as vegetation" [Menozzi, 2007: 147].

20 Just like the emotional dimension, the cognitive dimension cannot be ignored when it comes to encouraging citizens to accept the presence of spontaneous vegetation in urban environments. Finally, there is an instrumental dimension to consider, which calls into question the motivations underlying awareness-raising initiatives.

3. The instrumental dimension

21 As mentioned above, the essential message conveyed by these awareness-raising initiatives is one of coexistence between humans and non-humans in urban space. The aim is to persuade city dwellers that the city must be shared by all forms of life.

However, the argument of protecting biodiversity "for its own sake" does not always resonate with the public authorities and local residents, according to a regional official:

> We realise that defending nature for nature's sake, or defending biodiversity for its own sake, doesn't always work, especially with policymakers. So we focus on ecosystem services, because it has been demonstrated in a somewhat more economic or scientific way that nature provides us with services. In this way we can hope for a little more tolerance.
> Manager 2, regional administration, 04/10/22

22 Accordingly, the messages directed at the people of Brussels emphasise the importance of caring for plant life because of the services it provides, as illustrated by this excerpt from a website promoting citizen projects in Brussels: "In cities, nature plays a key role in reducing temperatures (urban heat-island effects) in the context of climate change, and in capturing fine particles for better air quality. Preserving as much vegetation and biodiversity as possible in Brussels is therefore vital for everyone's quality of life"[16].

23 Nature can therefore come "to the rescue of the city" in the face of climate change [Bourdeau-Lepage, 2023]. At the same time, caring for plants benefits individuals directly: it reduces stress, improves cardiovascular health, eases neck and back pain, and strengthens social ties through a sense of belonging [see a.o. Machon *et al.*, 2022; Bourdeau-Lepage, 2019; Van Meerbeek, 2014]. Another website[17], intended for Brussels residents and specifically devoted to green spaces, links these human benefits to those experienced by wildlife: "In addition to beautifying the city, plants make it more pleasant to live in. They help to reduce the heat-island effect, making the air more breathable when temperatures rise in summer. And through their barrier effect, they also reduce air pollution. But that's not all. Plants provide essential shelter and food for urban animals. Each initiative and green area helps to create connections between green spaces. These green corridors are essential to allow species to move through the city as well"[18].

24 This excerpt captures the different dimensions of the social dynamics surrounding (spontaneous) vegetation in Brussels: the emotional dimension (positive emotions linked to a city which is more beautiful and pleasant to live in); the cognitive dimension (introduction to the notion of ecological corridors in which vegetation plays a part[19]); and the instrumental dimension (vegetation provides services which are directly beneficial to the urban population). However, this association between the services rendered by the greening of the Brussels landscape and its management remains subject to debate.

> It's a real debate among environmentalists as to whether we should get people to defend nature for its intrinsic value and not just for what it gives us. But that's not always easy.
> Manager 2, regional administration, 04/10/22

25 The instrumental rationale regarding the social dynamics must therefore be put into perspective. Still, the question it raises – "Should nature be preserved for its intrinsic value or for the benefits it brings to humans, without which they cannot live?" [Larrègue, 2002: 82] – invites an ethical reflection on the coexistence of living species and on values which transcend human interest.

Conclusion

26 Spontaneous vegetation which grows in the cracks and gaps of the Brussels-Capital Region lies at the heart of the social dynamics which its survival depends upon. The emotions it arouses, the knowledge surrounding it and the interests it may serve all shape the emergence of initiatives to protect it. A closer look at one such initiative – the "Fleurs de trottoir" project – shows how this type of awareness-raising initiative is designed to bring about a shift in behaviour towards spontaneous vegetation, and more broadly, towards urban nature itself.

27 At a time when environmental damage is proliferating and environmental impunity remains widespread due to weak enforcement, examining spontaneous vegetation in urban environments from a criminological perspective highlights other forms of social response by those who seek to preserve it. A project such as "Fleurs de trottoir" is all about prevention. It is one of a range of projects designed to support the greening of Brussels. These projects involve citizens, associations (environmental, neighbourhood, etc.) and public authorities in an expanding network of ongoing initiatives. An example of this is FloraBru, the census of wild plants in Brussels (2024–2027), designed to produce a new floristic atlas of the Brussels-Capital Region, including new guided walks to promote knowledge of urban flora[20].

28 Our study suggests that while "ordinary" nature – the kind encountered in daily life – remains largely absent from criminal policy, it benefits from public and civic efforts aimed at its preservation. Further research is needed, however, to explore how far repressive measures are contemplated – or actually used – when norms protecting spontaneous vegetation in Brussels are violated, such as the ban on spreading pesticides in public spaces[21]. Our findings indicate that social responses to biodiversity loss rarely take the form of punishment. This is partly because the harms themselves remain invisible – unrecognised as such – or because they are largely underestimated. This observation invites deeper reflection on how we perceive damage to plant life, beginning with the professionals responsible for managing it. Our approach should be expanded to include all of the stakeholders involved in vegetation management in Brussels, to take account of their diversity. Municipal and regional officials work alongside association leaders, gardeners, municipal workers and volunteers, who ensure the day-to-day management of plant life in the city: their perceptions, together with those of enforcement authorities (sanctioning officers, police and prosecutors), are essential to understanding how urban nature is protected.

29 Finally, our study of spontaneous vegetation in Brussels also raises questions about the receptiveness of awareness-raising projects such as "Fleurs de trottoir" among the general population, particularly with regard to individual characteristics – age, gender, socio-professional category, etc. – which remain poorly explored [Menozzi, 2007]. Addressing them could open new research avenues, including whether such awareness-raising initiatives help to reduce, reproduce or even reinforce socio-spatial inequalities.

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NOTES

1. "Criminal behavior against biodiversity" (CRIM-BIODIV) research, conducted from 1 April 2021 to 31 March 2023, with funding from the Belgian federal science policy (BELSPO, BRAIN-be 2.0), coordinated by INCC and conducted with Canopéa [Scheer *et al.*, 2023].
2. In the broadest sense of the term, understood here as transgressions (penal or administrative) which are punishable by the norms governing social life.
3. For an overview of these various associations, see for example those which have joined forces to form the non-profit organisation Bruxelles Nature. See https://bruxellesnature.be/
4. When we speak of the Brussels urban area or Brussels, we are referring to the territory of the Brussels-Capital Region, made up of its 19 municipalities.
5. The booklet "Fleurs de trottoirs. Entre les pavés, la nature sauvage !" is available for download. See https://environnement.brussels/sites/default/files/user_files/20200423_carnet_plantes_fr-web.pdf or https://urban-ecology.be/blog/fleursdetrottoirs
6. Registration was via an online form. In 2022, we took part in one of these walks, organised that year from May to September. They took place in the 19 municipalities of the Brussels-Capital Region and lasted around 1.5 hours, guided by specialists. Signing up for these walks as citizens obviously has methodological implications which we are unable to discuss here. In this respect, it should be noted that this observation took place in a public place, without any intervention on our part (we never spoke or asked any questions, following the guide and listening to the explanations as part of the group of participants).
7. These three dimensions are not hierarchical.
8. The people who signed up for the walk were of course not indifferent to spontaneous vegetation. But during the walk, passers-by saw us examining what was growing in the cracks in the pavement and were curious, some of them stopping to speak with us. These passers-by were moved from indifference to attentiveness.
9. See the project website: http://www.wasp-project.net/
10. See for example https://urban-ecology.be/blog/2023/10/10/2023-2025-vegetalaeken. It is not possible to list all of the initiatives carried out in the 19 municipalities of the Brussels-Capital Region here, as they are so numerous and are mentioned on various platforms and web pages.
11. 89 nesting sites were surveyed in the Brussels-Capital Region, some of which are illustrated in the publication (see https://brrc.be/sites/default/files/2021-09/Streetbees_FR.pdf).
12. This can be explained by our survey design, which did not aim to question the population targeted by the campaigns (see introduction). Similarly, we did not question the municipal officials in charge of road maintenance, who may have more critical considerations, for example with respect to the management of invasive plants such as giant hogweed or Japanese knotweed by mechanical removal.

13. See https://youtu.be/OW1CQMi8LLY.
14. "Coexistence, la faune sauvage bruxelloise", exhibition by Thomas Jean. See https://maisonecohuis.be/?p=2704. See also the work of Chloé Vanden Berghe, which shows how foxes are spreading in areas of the Brussels-Capital Region: "Today, the life of a fox in the Bois de la Grappe district involves transforming space by digging burrows under thick bushes or in the middle of avenues" [Vanden Berghe, 2023: 29].
15. Study of 88 exhibitions presented mainly in France, but also in neighbouring countries and Quebec.
16. https://inspironslequartier.brussels/nature-biodiversite/
17. Awareness-raising initiatives and calls for ecological development in Brussels are multiplying. They are run by a variety of stakeholders and groups, often with the support of Bruxelles environnement/Leefmilieu Brussel.
18. https://vegetage.brussels/
19. Ecological corridors are spaces which enable species to move under favourable conditions, ensuring connections between biodiversity reservoirs [Makowiak, 2015: 40].
20. https://www.natagora.be/FloraBru.
21. Article 48 of the general police regulations common to the 19 municipalities of Brussels stipulates that "Without prejudice to the legislation in force, it is forbidden to spread any form of pesticide in the public space".

ABSTRACTS

Spontaneous vegetation which grows in the cracks and gaps of the Brussels-Capital Region lies at the heart of the social dynamics which its survival depends upon. The emotions it arouses, the knowledge surrounding it and the interests it may serve all shape the emergence of initiatives to protect it. A critical approach is proposed, with a perspective which aligns with a criminology of social reaction aimed at understanding how human beings respond (or not) to the destruction of biodiversity.

La végétation spontanée qui se déploie dans les interstices urbains de la Région de Bruxelles-Capitale est au cœur d'une dynamique sociale dont dépend sa survie. Les émotions qu'elle suscite, les connaissances qui l'entourent et les intérêts qu'elle peut servir sont autant de dimensions qui participent à l'émergence d'initiatives visant à la protéger. Une approche critique en est proposée, dans la perspective d'une criminologie de la réaction sociale qui vise à comprendre comment l'être humain réagit (ou non) à la destruction de la biodiversité.

De spontane vegetatie die in spleten en kieren groeit in het Brussels Hoofdstedelijk Gewest staat centraal binnen een sociale dynamiek die bepalend is voor het voortbestaan van deze planten. De emoties die ze wekken, de kennis erover en de voordelen die ze kunnen bieden, zijn allemaal dimensies die een rol spelen bij het ontstaan van initiatieven om deze vegetatie te beschermen. Er wordt een kritische benadering voorgesteld binnen het denkkader van de criminologie van de sociale reactie die probeert te begrijpen hoe de mens al dan niet reageert op de aantasting van de biodiversiteit.

INDEX

Mots-clés: écologie, environnement, aménagement du territoire
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