

The Control and Eradication of Invasive Species in Urban Areas in terms of South African Law: The City of Cape Town and Polyphagous Shot Hole Borer Beetles

M Samons*

Online ISSN
1727-3781

P·E·R

Pioneer in peer-reviewed,
open access online law publications

Abstract

The introduction and prevalence of invasive species is an alarming reality in South Africa. The emergence of invasive species has resulted in harmful consequences on various levels and has adverse impacts on the environment and the economy. Hence, biological invasions demand attention. The control and eradication of invasive species can serve to minimise their adverse impact. In 2019 the South African National Biodiversity Institute highlighted the threats posed by biological invasions in South Africa and specifically identified Polyphagous Shot Hole Borer Beetles as a significant new invasive species in South Africa that has a demonstrable ongoing detrimental impact on varieties of trees. Polyphagous Shot Hole Borer Beetles have been detected in various urban areas in South Africa, including the City of Cape Town. This note briefly examines the control and eradication of invasive species in urban areas in terms of the South African legal framework, specifically against the backdrop of the emergence of the Polyphagous Shot Hole Borer Beetles in the City of Cape Town.

Keywords

Invasive species; environmental law; legal framework; South Africa; the City of Cape Town.

Author

Marcelle Samons

Affiliation

North-West University,
South Africa

Email:

marcelliesamons@gmail.com

Date Submitted

30 December 2021

Date Revised

1 November 2022

Date Accepted

1 November 2022

Date published

18 November 2022

Editor Prof AA du Plessis

How to cite this article

Samons M "The Control and Eradication of Invasive Species in Urban Areas in terms of South African Law: The City of Cape Town and Polyphagous Shot Hole Borer Beetles" *PER / PELJ* 2022(25) – DOI <http://dx.doi.org/10.17159/1727-3781/2022/v25i0a13012>

Copyright



DOI

<http://dx.doi.org/10.17159/1727-3781/2021/v25i0a13012>

1 Introduction

The management of invasive species in South African urban areas is imperative due to the significant adverse impact of invasive species on the environment, on the economy, on human health and sustainable development.¹ In 2019 the South African National Biodiversity Institute (hereafter SANBI) published its second report titled *The Status of Biological Invasions and their Management in South Africa* (hereafter SANBI 2019 Report).² The SANBI 2019 Report indicated that the South African government expends more than R1-billion per annum on managing biological invasions and the adverse impacts emanating therefrom.³ According to the Report, there are over 1880 alien species in South Africa and more than a third of these are classified as invasive.⁴

More specifically, the Report highlights the introduction and wanton spread of the *Euwallacea fornicatus* or Polyphagous Shot Hole Borer Beetle (hereafter PSHB beetle) in South Africa.⁵ The emergence of the PSHB beetle in South African urban areas is particularly concerning as it has already been detrimental to vulnerable trees and continues to pose a threat.⁶ The PSHB beetle has been detected *inter alia* in Somerset West, which is in the municipal parameters of the City of Cape Town.⁷ In Somerset

* Marcelle Samons. BA (Law) LLB (NWU). Email: marcelliesamons@gmail.com. ORCID 0000-0001-9083-8162. This note is based on the author's LLB dissertation completed in 2021 at the Faculty of Law, North-West University, South Africa. This note was completed while the author was a student researcher at the NRF South African Research Chair in Cities, Law and Environmental Sustainability (CLES), Faculty of Law, North-West University. All views and errors are the author's own.

¹ An invasive species is defined as an "alien species which becomes established in natural or semi-natural ecosystems or habitat, is an agent of change, and threatens native biological diversity" (IUCN 2000 <https://portals.iucn.org/library/efiles/documents/Rep-2000-052.pdf> 5; Poona 2008 *Alternation* 160-163; SANBI 2021 <https://bit.ly/3xpClaz>; SANBI and CIB 2019 <http://opus.sanbi.org/jspui/handle/20.500.12143/7560> (hereafter SANBI 2019 Report) 1).

² The report was published in compliance with s 11(1)(a)(iii) of the *National Environmental Management: Biodiversity Act* 10 of 2004 (hereafter the NEMBA) and reg 13 of the *Alien and Invasive Species Regulations, 2020* (GN R1020 in GG 43735 of 25 September 2020 – hereafter the *AIS Regulations*) (SANBI 2019 Report 1-2).

³ Working for Water date unknown <https://sites.google.com/site/wfwplanning/money-spent?authuser=0>; SANBI 2019 Report VII, XV, 1, 37, 42, 54; SANBI 2021 <https://bit.ly/3xpClaz>.

⁴ SANBI 2019 Report XV, 19, 25; SANBI 2021 <https://bit.ly/3xpClaz>.

⁵ SANBI 2019 Report VII, XV, 13, 19-20, 24-25; FABI date unknown <https://www.fabinet.up.ac.za/pshb>.

⁶ SANBI 2019 Report VII, XV, 13, 19-20, 24-25; FABI date unknown <https://www.fabinet.up.ac.za/pshb>; Polyphagous Shot Hole Borer date unknown <https://polyphagous-shot-hole-borer.co.za/the-problem/>; Cape Town Invasives date unknown <https://www.capetowninvasives.org.za/shot-hole-borer>.

⁷ SANBI 2019 Report 24; Cape Town Invasives date unknown <https://www.capetowninvasives.org.za/shot-hole-borer>; FABI 2020 <https://www.fabinet.up.ac.za/index.php/news-item?id=945>.

West, various tree species such as the London plane, Boxelder and English oak, have been subjected to infestations of PSHB beetles.⁸

The objective of this note is to briefly examine the responsiveness of the South African legal framework to biological invasions in an effort to prevent or minimise the adverse impacts associated therewith. This is done with specific reference to the PSHB beetle that has recently emerged in the City of Cape Town.⁹ The paper considers the relevant national, provincial, and city-level law and policy frameworks.

2 What is an invasive species?

Section 1 of the *National Environmental Management: Biodiversity Act 10 of 2004* (hereafter the *NEMBA*) defines "invasive species" in legal terms as:

any species whose establishment and spread outside of its natural distribution range-

- (a) threaten ecosystems, habitats or other species or have demonstrable potential to threaten ecosystems, habitats or other species; and
- (b) may result in economic or environmental harm or harm to human health.¹⁰

This definition highlights the qualities of an invasive species in terms of which it can be determined if it qualifies to be classified as invasive.¹¹ The PSHB can be examined in these terms to see if it qualifies. The origin of the PSHB beetle is in South-East Asia.¹² Hence, South African urban areas are not included in the "natural distribution range" of this species. Rather, it is speculated that the species was introduced accidentally through wood packaging.¹³ Subsequent to its introduction in South Africa, PSHB beetles have demonstrated that they have a detrimental impact on trees in urban areas.¹⁴ On the basis of the *NEMBA*'s definition of invasive species, the

⁸ FABI 2020 <https://www.fabinet.up.ac.za/index.php/news-item?id=945>.

⁹ SANBI 2019 Report 24; Cape Town Invasives date unknown <https://www.capetowninvasives.org.za/shot-hole-borer>; FABI 2020 <https://www.fabinet.up.ac.za/index.php/news-item?id=945>.

¹⁰ Section 1 of the *NEMBA*.

¹¹ Section 1 of the *NEMBA*.

¹² SANBI 2019 Report XV, 13, 24-25; FABI date unknown <https://www.fabinet.up.ac.za/pshb>; Polyphagous Shot Hole Borer date unknown <https://polyphagous-shot-hole-borer.co.za/the-problem/>; Cape Town Invasives date unknown <https://www.capetowninvasives.org.za/shot-hole-borer>.

¹³ Section 1 of the *NEMBA*; SANBI 2019 Report XV, 13, 24-25; FABI date unknown <https://www.fabinet.up.ac.za/pshb>; Polyphagous Shot Hole Borer date unknown <https://polyphagous-shot-hole-borer.co.za/the-problem/>; Cape Town Invasives date unknown <https://www.capetowninvasives.org.za/shot-hole-borer>.

¹⁴ Section 1 of the *NEMBA*; SANBI 2019 Report XV, 13, 24-25; FABI date unknown <https://www.fabinet.up.ac.za/pshb>; Polyphagous Shot Hole Borer date unknown <https://polyphagous-shot-hole-borer.co.za/the-problem/>; Cape Town Invasives date unknown <https://www.capetowninvasives.org.za/shot-hole-borer>.

harmful nature of invasive species can be three-fold – the environment, the economy, or human health may be affected.¹⁵ The multidimensional harm can be illustrated by PSHB beetles' threat to trees with agricultural value (for example, avocado trees or *Persea americana*). Harm to these trees may result in economic repercussions with consequential effects on food production and ultimately human health.¹⁶ The definition is arguably broad as it provides that the establishment of the species in the new place need not pose an actual threat, but a *potential* threat to the new environment will suffice, together with possible harm to the economy, the environment or human health.¹⁷ In this instance this point is moot, since PSHB beetles pose actual threats and their emergence have had proven adverse impacts.¹⁸ The definition of "invasive species" in the City of Cape Town's *Local Biodiversity Strategy and Action Plan* of 2019 (hereafter LBSAP) reflects the definition in section 1 of the *NEMBA*.¹⁹

3 National and provincial legal framework

Section 24 of the *Constitution of the Republic of South Africa*, 1996 (hereafter the *Constitution*) entrenches an environmental right in the Bill of Rights as a human right.²⁰ Its provisions are broad and do not directly address the control and eradication of invasive species, such as PSHB beetles – understandably so.²¹ Be that as it may, considering the harmful impact of biological invasions, the control and eradication of invasive species fall within the broad scope of this section (which is further evident from the discussion of the *NEMBA* below).

The *National Environmental Management Act* 107 of 1998 (hereafter the *NEMA*), as amended, does not venture into specific environmental issues

¹⁵ Section 1 of the *NEMBA*.

¹⁶ SANBI 2019 Report 24.

¹⁷ Section 1 of the *NEMBA*.

¹⁸ Section 1 of the *NEMBA*; SANBI 2019 Report XV, 13, 24-25; FABI date unknown <https://www.fabinet.up.ac.za/pshb>; Polyphagous Shot Hole Borer date unknown <https://polyphagous-shot-hole-borer.co.za/the-problem/>; Cape Town Invasives date unknown <https://www.capetowninvasives.org.za/shot-hole-borer>.

¹⁹ Section 1 of the *NEMBA*; City of Cape Town's *Local Biodiversity Strategy and Action Plan* (hereafter City of Cape Town *LBSAP*) (City of Cape Town 2019 https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies,%20plans%20and%20frameworks/Biodiversity_Strategy_and_Action_Plan.pdf) 4.

²⁰ Section 24 of the *Constitution of the Republic of South Africa*, 1996 (hereafter the *Constitution*) provides that: "Everyone has the right -
(a) to an environment that is not harmful to their health or well-being; and
(b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -
(i) prevent pollution and ecological degradation;
(ii) promote conservation; and
(iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

²¹ Section 24 of the *Constitution*.

such as biological invasions. Nevertheless, the *NEMA* contemplates the creation of and refers to Specific Environmental Management Acts (hereafter SEMA) and lists the *NEMBA*, amongst others, as such.²² Beyond the *NEMA*'s broad principles, section 11 of the *NEMA* provides for the preparation and submission of environmental implementation and management plans.²³ Section 11 of the *NEMA* is specifically important to the control and eradication of invasive species, since it is supplemented by section 76(2) of the *NEMBA*, which imposes an obligation on organs of state in all spheres of government to prepare an invasive species monitoring, control and eradication plan for land under their control as part of the environmental plans required by the former section.²⁴

The *NEMBA* was enacted as a so-called SEMA.²⁵ Section 24(b) of the *Constitution* contemplates the creation of legislation that prevents pollution and ecological degradation, promotes conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.²⁶ The *NEMBA* is practically a manifestation of this constitutional mandate in the context of biodiversity.²⁷

The *NEMBA* deals with various matters relating to the management of invasive species and from its provisions it is notable that there are a few relevant role-players. The first provision that deals directly with the control and eradication of invasive species is section 11(1)(a)(iii) and it also identifies such role-players – SANBI has the function of monitoring the status of all listed invasive species and reporting thereon to the Minister.²⁸ It further vests SANBI with the power to coordinate and implement programmes that prevent, control and eradicate invasive species listed as such.²⁹ The Minister is further obliged to publish a national list of invasive species to which chapter 5 will apply at country level.³⁰ In practical terms, the *NEMBA* required the Minister to issue the first publication of a national invasive species list by 31 August 2006, but the list was only published in 2014 and recently updated in 2020.³¹

²² Section 1 of the *National Environmental Management Act* 107 of 1998 (hereafter the *NEMA*).

²³ Section 11 of the *NEMA*.

²⁴ Section 76(2) of the *NEMBA*.

²⁵ Section 1 of the *NEMA*.

²⁶ Section 24(b) of the *Constitution*.

²⁷ Section 2(a)(i) of the *NEMBA*.

²⁸ Section 11(1)(a)(iii) of the *NEMBA*.

²⁹ Section 11(1)(m)(ii) of the *NEMBA*.

³⁰ Section 70(1)(a) of the *NEMBA*.

³¹ GN R598 in GG 37885 of 1 August 2014; GN 1003 in GG 43726 of 18 September 2020; In *Minister of Water and Environmental Affairs v Kloof Conservancy* [2015] JOL 34755 (SCA) (see paras 2, 5, 6, 22 and 23), the respondent successfully applied to the High Court for an order of unlawfulness and invalidity in relation to the Minister's failure to publish a list of invasive species in terms of the *NEMBA* within

In addition, the *NEMBA* empowers a provincial member of the executive council for environmental affairs (hereafter MEC) to publish a provincial list of invasive species through a notice in the Government Gazette.³² The Minister and MECs are obliged to review the lists regularly.³³ The Minister is further vested with the duty to ensure the coordination and implementation of management programmes for biological invasions and is vested with the power to establish a public entity that carries out such programmes.³⁴ Other relevant role-players include the permit holders of restricted activities and land owners (as further discussed below).³⁵

Chapter 5 of the *NEMBA* deals specifically with "species and organisms posing potential threats to biodiversity"; that is, alien and invasive species.³⁶ Chapter 5, amongst other things, aims to control and eradicate invasive species in ecosystems or habitats where the presence of these species may have harmful consequences, particularly in the context of biodiversity.³⁷

Chapter 5 continuously refers to "listed invasive species", which includes any invasive species listed in the national and provincial compilations.³⁸ This definition is paramount, and it should be noted that many of the sections discussed below refer and apply specifically to "listed invasive species", as opposed to "invasive species".³⁹ The first national list of invasive species, compiled in terms of the *NEMBA* was published in 2014 and it was recently repealed with updated *Alien and Invasive Species Lists* in 2020.⁴⁰ More than 500 different species are classified as invasive in terms of the current national list.⁴¹ It has, however, been reported that the current national list fails to include invasive species that necessitate regulation, the PSHB beetle being an example.⁴² The PSHB beetle is not yet included in the list, even though it meets the *NEMBA* definitional elements as set out above.⁴³

the given legislative timeframe. Notwithstanding, the Minister communicated to the High Court her intention to publish the final list and submitted drafts thereof. On appeal, the Supreme Court of Appeal acknowledged the Minister's "desultory approach" but it set aside the High Court's orders in part, reasoning that it essentially disrespects the separation of powers.

³² Section 70(1)(b) of the *NEMBA*.

³³ Section 70(2) of the *NEMBA*.

³⁴ Section 75(4) and (5) of the *NEMBA*.

³⁵ Section 73 of the *NEMBA*.

³⁶ Chapter 5 of the *NEMBA*.

³⁷ Section 64(1)(b) and (c) of the *NEMBA*.

³⁸ Sections 1 and 70 of the *NEMBA*.

³⁹ Sections 1, 71, 73, 75, 76 and 77 of the *NEMBA*.

⁴⁰ GN R598 in GG 37885 of 1 August 2014; GN 1003 in GG 43726 of 18 September 2020.

⁴¹ GN 1003 in GG 43726 of 18 September 2020.

⁴² SANBI 2019 Report 20, 24; GN 1003 in GG 43726 of 18 September 2020.

⁴³ SANBI 2019 Report 20, 24; GN 1003 in GG 43726 of 18 September 2020.

In reality, there are thus more "invasive species", as discussed above, than "listed invasive species".

Section 71 of the *NEMBA* deals with restricted activities involving listed invasive species, which are only lawful after permits are obtained in accordance with the provisions of Chapter 7.⁴⁴ The permits must be accompanied by an assessment of risks and potential biodiversity impacts which would result from the restricted activity should a permit be obtained.⁴⁵ Section 1 sets out what constitutes a "restricted activity".⁴⁶ Essentially, what is restricted includes the import, possession, cultivation, translocation, trade, donation or disposal of listed invasive species.⁴⁷

Furthermore, the *NEMBA* creates a duty of care relating specifically to listed invasive species.⁴⁸ Persons who hold permits that authorise restricted activities and land owners are bound by this duty of care.⁴⁹ The duty of care resting on a restricted activity permit holder determines that the permit holder must avoid or at the least minimise the harm caused to biodiversity and, of course, comply with the conditions of the permit.⁵⁰ The duty of care resting on a land owner determines firstly that the landowner must furnish a written notification to the relevant competent authority of any listed invasive species present on the land; secondly, the landowner must take steps to control and eradicate the species and to prevent its proliferation; and thirdly, the landowner must take the necessary steps towards the prevention and minimisation of harm to biodiversity.⁵¹

The duty of care resting on permit holders and landowners is arguably onerous since a competent authority may in the case of non-compliance, issue a written directive to a person to take appropriate remedial steps in terms of the harm to biodiversity caused by the person's conduct or by the invasion on the land owned by the person.⁵² Anyone may make a written request to a competent authority to issue such a directive.⁵³ Moreover, the competent authority may claim some or all reasonable costs incurred for the implementation of the directive from the person, or from both the person as well as another person who benefited from the implementation of the directive.⁵⁴ Recently the first conviction for non-compliance with invasive

⁴⁴ Section 71(1) of the *NEMBA*.

⁴⁵ Section 71(2) of the *NEMBA*.

⁴⁶ Section 1 of the *NEMBA*.

⁴⁷ Section 1 of the *NEMBA*.

⁴⁸ Section 73 of the *NEMBA*.

⁴⁹ Section 73 of the *NEMBA*.

⁵⁰ Section 73(1) of the *NEMBA*.

⁵¹ Section 73(2) of the *NEMBA*.

⁵² Section 73(3) of the *NEMBA*.

⁵³ Section 74(1) of the *NEMBA*.

⁵⁴ Section 73(4) of the *NEMBA*.

species provisions, particularly this duty of care, was handed down in South Africa in the case of *State v Granada Home Builders CC*.⁵⁵

Section 75(1) determines that appropriate methods must be used and a cautious approach must be undertaken to control and eradicate species to avoid or minimise possible harm to biodiversity and the environment.⁵⁶ In this regard it is submitted that the control and eradication of invasive species (i.e. the process or manner in which the species are combatted or eradicated) should not be more detrimental than the harmful impact caused by the presence of the invasive species. Section 75(3) contemplates re-establishment, regrowth, and reproduction and in an effort to avoid the aforesaid, it prescribes that the management methods must also be applied to the offspring of invasive species, for example.⁵⁷

The *NEMBA* makes reference to the *National Environmental Management: Protected Areas Act 57 of 2003* (hereafter the *NEMPAA*) and protected areas.⁵⁸ This remains relevant in the urban context, since protected areas may be nestled in urban areas, for example the Kirstenbosch National Botanic Garden.⁵⁹ It provides that an invasive species strategy must be incorporated into the management plan of a protected area.⁶⁰ The management of a protected area must also report to the Minister or relevant MEC about the status of listed invasive species in the protected area.⁶¹ Such status reports must incorporate the following particulars: a detailed and descriptive list related to listed invasive species that have invaded the protected area; a description of the specific area that has been invaded; the degree of invasion as assessed; and a report of the success of control and eradication measures used in the past.⁶² Section 76(2) of the *NEMBA* supplements section 11 of the *NEMA* in that it requires all organs of state to prepare invasive species control and eradication plans for land controlled by them as part of their environmental management plans.⁶³ With regard to municipalities, development plans must include plans for monitoring,

⁵⁵ *State v Granada Home Builders CC* (Pine Town Magistrates' Court) (unreported) case number 601/02/2017 of 1 September 2017; SANBI 2019 Report 52.

⁵⁶ Section 75(1) and (2) of the *NEMBA*; Section 1 of the *NEMBA* defines "control" as: "(a) to combat or eradicate an alien or invasive species; or (b) where such eradication is not possible, to prevent, as far as may be practicable, the recurrence, re-establishment, re-growth, multiplication, propagation, regeneration or spreading of an alien or invasive species".

⁵⁷ Section 75(3) of the *NEMBA*.

⁵⁸ Sections 1 and 9 of the *National Environmental Management: Protected Areas Act 57 of 2003* (hereafter the *NEMPAA*); ss 76 and 77 of the *NEMBA*.

⁵⁹ DFFE 2022 https://egis.environment.gov.za/protected_areas_register.

⁶⁰ Section 76(1) of the *NEMBA*.

⁶¹ Section 77(1) of the *NEMBA*.

⁶² Section 77(2) of the *NEMBA*.

⁶³ Sections 11 of the *NEMA*; s 76(2)(a) of the *NEMBA*.

controlling and eradicating invasive species.⁶⁴ Such plans must be inclusive of detailed and descriptive lists of the invasive species that have been established on the land; a description of the areas of the land which has been invaded; the degree of invasion as assessed; an indication of the success of measures used in the past and the current control measures; as well as indicators of progress, success and the completion of the plan.⁶⁵

It is evident that the *NEMBA* contains comprehensive provisions pertaining to the control and eradication of invasive species, but it is notable that many of its provisions (sections 71, 73, 75, 76 and 77) refer to and can be utilised for "listed invasive species" as defined in section 1.⁶⁶ It has already been pointed out that PSHB Beetles have not yet been listed as such and one can deduce that these sections cannot yet be applied to PSHB beetles.⁶⁷ In the SANBI 2019 report it was recognised that it has been suggested that an emergency listing should be made to manage PSHB beetles with the necessary urgency.⁶⁸ The *NEMBA* also contemplates the publication of regulations to supplement its provisions.⁶⁹ The *National Strategy for Dealing with Biological Invasions* of 2014 identifies the absence of legislation pertaining to biological invasion management as an enormous impediment, but points out that the promulgation of regulations is remedial.⁷⁰ Considering that no new legislation dealing with the management of biological invasions has been adopted, this position stands. The *AIS Regulations* indeed contain supplementary provisions, but various of its regulations also refer to "listed invasive species", and as such, it is also not yet applicable to the PSHB beetles.⁷¹

The *Agricultural Pests Act* 36 of 1983 (hereafter the *APA*) in essence aims to prevent and combat agricultural pests.⁷² Agricultural pests may fall within the scope of "invasive species", as is the case with PSHB beetles.⁷³ *Control Measures Relating to the Polyphagous Shot Hole Borer* were recently published under section 6 of the *APA*.⁷⁴ Section 6(1) of the *APA* empowers

⁶⁴ Section 76(2)(b) of the *NEMBA*; section 11 of the *NEMA*.

⁶⁵ Section 76(4) of the *NEMBA*.

⁶⁶ Sections 1, 71, 73, 75, 76 and 77 of the *NEMBA*.

⁶⁷ SANBI 2019 Report 20, 24.

⁶⁸ SANBI 2019 Report 24.

⁶⁹ Sections 70(1)(a), 71(3), 71A and 97(1) of the *NEMBA*.

⁷⁰ DFFE 2014 <http://www.invasives.org.za/legislation/what-does-the-law-say#national-strategy> xi.

⁷¹ Regulations 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13 of the *AIS Regulations*; SANBI 2019 Report 20, 24.

⁷² Preamble of the *Agricultural Pests Act* 43 of 1983 (hereafter the *APA*).

⁷³ SANBI 2019 Report 24; GN R725 in GG 44983 of 13 August 2021 (*Control Measures Relating to the Polyphagous Shot Hole Borer*) (hereafter the *Control Measures*).

⁷⁴ SANBI and CIB 2017 <https://www.sanbi.org/wpcontent/uploads/2018/11/National-Status-Report-web-6MB.pdf> (hereafter SANBI 2017 Report) xv and 4; s 6 of the *APA*; the *Control Measures*.

the Minister (responsible for agriculture – section 1 of the *APA*) to prescribe control measures to be complied with or executed by land users.⁷⁵ The *Control Measures Relating to the Polyphagous Shot Hole Borer* facilitates a response to PSHB beetles as it compels an immediate notification to executive officers appointed in terms of section 2(1) of the *APA* or the authority (as defined in the notice) from land users if PSHB beetles are present or if their presence is suspected.⁷⁶ Further, if the presence of PSHB beetles is identified or recorded for the first time in a pest-free area, an individual, organisation or institution is bound to immediately report this to the executive officer as appointed in terms of section 2(1) of the *APA*.⁷⁷ The notice also places certain responsibilities and even powers on executive officers: the identification and confirmation of the presence of PSHB beetles by using phytosanitary measures; the prescription or revocation of such phytosanitary measures to be complied with by landowners; and the prescription of measures to manage PSHB beetles in instance where landowners or users are unable to comply with prescribed measures.⁷⁸ In instances where plants (listed in table 2 and 3) have been infested with PSHB beetles, the notice prohibits the removal of such plants except if a permit was obtained; or if certification was given by the Department of Agriculture, Land Reform and Rural Development; or where PSHB beetles cannot be disseminated by the plant product; or if authorisation was given by the executive officer.⁷⁹ The keeping, planting or cultivation of infested plants in table 2 is also prohibited.⁸⁰ If these provisions are contravened or a reasonable suspicion exists to that effect, the plants involved may be destroyed by the executive officer, for example.⁸¹ A land user is bound to take the prescribed or specified reasonable measures to manage and control PSHB beetles.⁸² It is also important to note that a land user may apply for a removal permit and the executive officer may exempt a land user from the prohibition if certain stipulated requirements have been satisfied.⁸³ Be that as it may, the scope of the *APA*, at large, is applicable to agricultural pests that bring about adverse consequences for agricultural produce and will thus not facilitate a response to PSHB beetles in urban areas.⁸⁴

The *Conservation of Agricultural Resources Act* 43 of 1983 (hereafter the *CARA*) provides a response to biological invasions in urban areas as it aims,

⁷⁵ Sections 1 and 6(1) of the *APA*.

⁷⁶ Sections 1 and 2(1) of the *Control Measures*; s 2(1) of the *APA*.

⁷⁷ Section 2(2) of the *Control Measures*; s 2(1) of the *APA*.

⁷⁸ Section 3 of the *Control Measures*.

⁷⁹ Tables 2 and 3 and s 4(1) of the *Control Measures*.

⁸⁰ Table 2 and s 4(1) of the *Control Measures*.

⁸¹ Section 6 of the *Control Measures*.

⁸² Section 7 of the *Control Measures*.

⁸³ Sections 10 and 11 of the *Control Measures*.

⁸⁴ SANBI 2017 Report xv and 4.

inter alia, to combat the occurrence and dissemination of invader plants, including those prevalent in urban areas.⁸⁵ Since its scope of application is restricted to invader plants it is, of course, not applicable to PSHB beetles.

Although some provincial ordinances have been enacted, Kidd⁸⁶ states that there has been "little legislative activity" *vis-à-vis* provincial nature conservation at large.⁸⁷ Most provincial acts provide broadly for environmental protection and conservation and do not make express reference to the control and eradication of invasive species.⁸⁸ For example, the *Western Cape Nature Conservation Laws Amendment Act 3 of 2000* deals extensively with nature conservation and it defines nature conservation as the "preservation of fauna and flora".⁸⁹ It can be argued that the control and eradication of invasive species (such as PSHB beetles) will ultimately preserve fauna and flora, but it is not directly provided for.⁹⁰

4 The City of Cape Town

The City of Cape Town is a metropolitan municipality and home to unmatched biodiversity.⁹¹ PSHB beetles have recently been detected in its municipal boundaries and the infestation warrants a response to protect the significant biodiversity.⁹²

The City of Cape Town's *Five Year Integrated Development Plan* (hereafter the *IDP*) for 2017 to 2022 identifies biodiversity management and invasive species management as part of its objective to create resource efficiency and security.⁹³ The *IDP* contemplates the implementation of the City of Cape Town's Invasive Species Project on all land owned by the municipality

⁸⁵ Preamble, ss 2(2)(a) and 3 of the *Conservation of Agricultural Resources Act 43 of 1983*.

⁸⁶ Kidd *Environmental Law* 101.

⁸⁷ Kidd *Environmental Law* 101.

⁸⁸ For example, *Gauteng General Law Amendment Act 4 of 2005*; *Mpumalanga Nature Conservation Act 10 of 1998*; *Limpopo Environmental Management Act 7 of 2003*; *Northern Cape Nature Conservation Act 9 of 2009*.

⁸⁹ Section 1 of the *Western Cape Nature Conservation Laws Amendment Act 3 of 2000*.

⁹⁰ Section 1 of the *Western Cape Nature Conservation Laws Amendment Act 3 of 2000*.

⁹¹ City of Cape Town *LBSAP* 7-8.

⁹² SANBI's 2019 Report 24; Cape Town Invasives date unknown <https://www.capetowninvasives.org.za/shot-hole-borer>; FABI 2020 <https://www.fabinet.up.ac.za/index.php/news-item?id=945>.

⁹³ City of Cape Town 2017 <https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies,%20plans%20and%20frameworks/IDP%202017-2022.pdf> (hereafter the City of Cape Town *Five Year IDP*) 76, 78-79.

and it aims to contribute to the identification, control and management of invasive species.⁹⁴ The *LBSAP* is aligned with this *IDP* and its targets.⁹⁵

The City of Cape Town recently published its *LBSAP*, which will be operative until 2029.⁹⁶ The *LBSAP* acknowledges that the City of Cape Town, as the third largest city in South Africa, "is a biodiversity hotspot without parallel".⁹⁷ The *LBSAP* states that the City of Cape Town complies with multilevel law pertaining *inter alia* to biodiversity and has also developed its own measures.⁹⁸ Accordingly, Irlich *et al*⁹⁹ acknowledges that there has been limited municipal management of invasive species, but notes that the City of Cape Town is an exception in this regard and gives recognition *inter alia* to its "municipal buy-in, departmental collaboration and a city-wide invasive plant tender".¹⁰⁰

The aim of the *LBSAP* is broader. The protection of biodiversity and the diminution of the threats posed by invasions are the focus.¹⁰¹ The *LBSAP* is comprehensive and has two components, strategy and action, which set out extensively how its objectives is to be achieved.¹⁰² The content of the *LBSAP* is too dense to venture into with detail, but its provisions seemingly support and supplement the requirements set by the *NEMBA*. For example, its action plan dictates that management must continuously raise awareness about the responsibilities of landowners, which arguably promotes the land owner's duty of care which is created by section 73 of the *NEMBA*.¹⁰³ It is also worth stating that the City of Cape Town has submitted Invasive Species Monitoring, Control and Eradication Plans in compliance with the *NEMBA*.¹⁰⁴

The City of Cape Town has an Invasive Species Unit that is part of the department that coordinates the *LBSAP*.¹⁰⁵ This Invasive Species Unit published a *Polyphagous Shot Hole Borer Protocol* in 2019 (hereafter referred to as the *Protocol*).¹⁰⁶ The *Protocol* acknowledges that management efforts with pesticides and fungicides have not proven to be

⁹⁴ City of Cape Town *Five Year IDP* 79.

⁹⁵ City of Cape Town *LBSAP* 8, 19.

⁹⁶ City of Cape Town *LBSAP* 8, 40.

⁹⁷ City of Cape Town *LBSAP* 7.

⁹⁸ City of Cape Town *LBSAP* 7.

⁹⁹ Irlich *et al* 2017 *ABC* 1-2.

¹⁰⁰ Irlich *et al* 2017 *ABC* 1-2.

¹⁰¹ City of Cape Town *LBSAP* 8.

¹⁰² City of Cape Town *LBSAP* 8, 15-24.

¹⁰³ City of Cape Town *LBSAP* 64; s 73 of the *NEMBA*.

¹⁰⁴ Section 76(1) and 77(1) of the *NEMBA*; reg 10 of the *AIS Regulations*; SANBI's 2017 Report 155-156.

¹⁰⁵ City of Cape Town *LBSAP* 8.

¹⁰⁶ City of Cape Town Invasive Species Unit 2019 https://www.capetowninvasives.org.za/images/PSHBorer/PSHB_-_Management_Protocol_28_05_2019_v3.pdf (hereafter the *Protocol*) 1.

completely successful for the effective eradication of PSHB beetles.¹⁰⁷ The *Protocol* involves the public in the detection process and the City of Cape Town's invasive species website has a dedicated icon dealing specifically with PSHB beetles that informs the public of various aspects pertaining to PSHB beetles.¹⁰⁸ In general and with regard to listed invasive species, this type of collaboration or partnership is ideal, since the *NEMBA* places a duty of care on public and private land owners.¹⁰⁹

5 Concluding remarks

The above analysis indicates that in general the South African legal framework indeed provides a response to the emergence of biological invasions.¹¹⁰ On a national level, there exist voluminous provisions relating specifically to the control and eradication of invasive species. Whilst the legislative measures seem to provide a comprehensive response to invasive species at large, their effectiveness has however not yet been ascertained because most of the legislation and the relevant regulations are relatively new. The same can arguably be said of the *Control Measures* and the *Protocol*.¹¹¹

Be that as it may, the *NEMBA*, the *APA* and the *CARA*, for the various reasons set out above, fail to provide a direct legislative response to the control and eradication of PSHB beetles in urban areas such as the City of Cape Town. Since the *NEMBA*'s provisions pertaining to invasive species are seemingly elaborate, it would be ideal for the *NEMBA*'s regulations to respond specifically to PSHB beetle invasions – even in the form of an emergency listing as was suggested in the SANBI 2019 Report.¹¹²

Despite the exclusion of PSHB beetles as invasive under the national list published in terms of the *NEMBA*, the City of Cape Town has responded to the PSHB beetle infestation.¹¹³ In accordance with the public involvement in the detection of PSHB beetles witnessed in the City of Cape Town, the initiation of even more public-private partnerships is supported as it can be mutually beneficial for municipalities and landowners.¹¹⁴ When one

¹⁰⁷ The *Protocol* 4.

¹⁰⁸ Cape Town Invasives date unknown <https://www.capetowninvasives.org.za/shot-hole-borer>; the *Protocol* 4-5.

¹⁰⁹ Section 73 of the *NEMBA*; Irlich *et al* 2017 *ABC* 4-9; City of Cape Town *LBSAP* 11.

¹¹⁰ GN 1003 in GG 43726 of 18 September 2020.

¹¹¹ SANBI 2017 Report 161; SANBI 2019 Report 38.

¹¹² SANBI 2019 Report 24.

¹¹³ SANBI 2017 Report 155-156; SANBI 2019 Report 20, 24; GN 1003 in GG 43726 of 18 September 2020; Cape Town Invasives date unknown <https://www.capetowninvasives.org.za/shot-hole-borer>; the *Protocol* 1-5.

¹¹⁴ Section 73 of the *NEMBA*; Irlich *et al* 2017 *ABC* 4-9; City of Cape Town *LBSAP* 11; Cape Town Invasives date unknown <https://www.capetowninvasives.org.za/shot-hole-borer>; the *Protocol* 4-5.

considers that the NEMBA's duty of care is vested in relation to listed invasive species (not yet including PSHB beetles), such voluntary collaborative management efforts are arguably even more valuable, and municipalities should endeavour to empower the public to contribute to the management efforts (as is done by the City of Cape Town).¹¹⁵

Bibliography

Literature

Irlich *et al* 2017 *ABC*

Irlich UM *et al* "Recommendations for Municipalities to Become Compliant with National Legislation on Biological Invasions" 2017 *ABC* 1-11

Kidd *Environmental Law*

Kidd M *Environmental Law* 2nd ed (Juta Cape Town 2017)

Poona 2008 *Alternation*

Poona N "Invasive Alien Plant Species in South Africa: Impacts and Management Options" 2008 *Alternation* 160-179

Case law

Minister of Water and Environmental Affairs v Kloof Conservancy [2015] JOL 34755 (SCA)

State v Granada Home Builders CC (Pine Town Magistrates' Court) (unreported) case number 601/02/2017 of 1 September 2017

Legislation

Agricultural Pests Act 36 of 1983

Conservation of Agricultural Resources Act 43 of 1983

Constitution of the Republic of South Africa, 1996

Gauteng General Law Amendment Act 4 of 2005

Limpopo Environmental Management Act 7 of 2003

Mpumalanga Nature Conservation Act 10 of 1998

National Environmental Management Act 107 of 1998

National Environmental Management: Biodiversity Act 10 of 2004

¹¹⁵ Section 73 of the NEMBA; Irlich *et al* 2017 *ABC* 4-9; City of Cape Town *LBSAP* 11; Cape Town Invasives date unknown <https://www.capetowninvasives.org.za/shot-hole-borer>; the *Protocol* 4-5.

National Environmental Management: Protected Areas Act 57 of 2003

Northern Cape Nature Conservation Act 9 of 2009

Western Cape Nature Conservation Laws Amendment Act 3 of 2000

Government publications

GN R598 in GG 37885 of 1 August 2014

GN 1003 in GG 43726 of 18 September 2020

GN R1020 in GG 43735 of 25 September 2020 (*Alien and Invasive Species Regulations, 2020*)

GN R725 in GG 44983 of 13 August 2021 (*Control Measures Relating to the Polyphagous Shot Hole Borer*)

Internet sources

City of Cape Town 2017 <https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies,%20plans%20and%20frameworks/IDP%202017-2022.pdf>

City of Cape Town 2017 *Five-Year Integrated Development Plan* <https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies,%20plans%20and%20frameworks/IDP%202017-2022.pdf> accessed 28 March 2021

City of Cape Town 2019 https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies,%20plans%20and%20frameworks/Biodiversity_Strategy_and_Action_Plan.pdf

City of Cape Town 2019 *Local Biodiversity Strategy and Action Plan* https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies,%20plans%20and%20frameworks/Biodiversity_Strategy_and_Action_Plan.pdf accessed 12 February 2021

City of Cape Town Invasive Species Unit 2019 https://www.capetowninvasives.org.za/images/PSHBorer/PSHB_-_Management_Protocol_28_05_2019_v3.pdf

City of Cape Town Invasive Species Unit 2019 *Polyphagous Shot Hole Borer Protocol* https://www.capetowninvasives.org.za/images/PSHBorer/PSHB_-_Management_Protocol_28_05_2019_v3.pdf accessed 2 December 2021

Cape Town Invasives date unknown <https://www.capetowninvasives.org.za/shot-hole-borer>

Cape Town Invasives date unknown *Shot Hole Borer Reporting Tool* <https://www.capetowninvasives.org.za/shot-hole-borer> accessed 2 December 2021

DFFE 2014 <http://www.invasives.org.za/legislation/what-does-the-law-say#national-strategy>

Department of Forestry, Fisheries and the Environment 2014 *A National Strategy for Dealing with Biological Invasions in South Africa* <http://www.invasives.org.za/legislation/what-does-the-law-say#national-strategy> accessed 5 May 2021

DFFE 2022 https://egis.environment.gov.za/protected_areas_register
Department of Forestry, Fisheries and the Environment 2022 *Register of Protected Areas (PAR), Kirstenbosch National Botanical Garden* https://egis.environment.gov.za/protected_areas_register accessed 28 August 2022

FABI date unknown <https://www.fabinet.up.ac.za/pshb>
Forestry and Agricultural Biotechnology Institute date unknown *PSHB Home* <https://www.fabinet.up.ac.za/pshb> accessed 2 December 2021

FABI 2020 <https://www.fabinet.up.ac.za/index.php/news-item?id=945>
Forestry and Agricultural Biotechnology Institute 2020 *PSHB is Spreading in the Western Cape* <https://www.fabinet.up.ac.za/index.php/news-item?id=945> accessed 2 December 2021

IUCN 2000 <https://portals.iucn.org/library/efiles/documents/Rep-2000-052.pdf>
International Unit for the Conservation of Nature 2000 *IUCN Guidelines for the Prevention of Biodiversity Loss Caused by Alien Invasive Species* <https://portals.iucn.org/library/efiles/documents/Rep-2000-052.pdf> accessed 11 January 2021

Polyphagous Shot Hole Borer date unknown <https://polyphagous-shot-hole-borer.co.za/the-problem/>
Polyphagous Shot Hole Borer date unknown *The Problem* <https://polyphagous-shot-hole-borer.co.za/the-problem/> accessed 2 December 2021

SANBI 2021 <https://bit.ly/3xpClaz>
South African National Biodiversity Institute 2021 *Minister Creecy Launches Latest Assessment on South Africa's Biological Invasions Report* <https://bit.ly/3xpClaz> accessed 5 August 2021

SANBI and CIB 2017 <https://www.sanbi.org/wpcontent/uploads/2018/11/National-Status-Report-web-6MB.pdf>
South African National Biodiversity Institute and DSI-NRF Centre of Excellence for Invasion Biology 2017 *The Status of Biological Invasions and their Management in South Africa* <https://www.sanbi.org/wpcontent/uploads/2018/11/National-Status-Report-web-6MB.pdf> accessed 5 January 2021

SANBI and CIB 2019 <http://opus.sanbi.org/jspui/handle/20.500.12143/7560>
 South African National Biodiversity Institute and DSI-NRF Centre of
 Excellence for Invasion Biology 2019 *The Status of Biological Invasions and
 their Management in South Africa*
<http://opus.sanbi.org/jspui/handle/20.500.12143/7560> accessed 5 August
 2021

Working for Water date unknown [https://sites.google.com/site/wfwplanning/
 money-spent?authuser=0](https://sites.google.com/site/wfwplanning/money-spent?authuser=0)

Working for Water date unknown *Money Spent*
<https://sites.google.com/site/wfwplanning/money-spent?authuser=0> date
 accessed 21 December 2021

List of Abbreviations

ABC	Bothalia, African Biodiversity and Conservation
APA	Agricultural Pests Act 36 of 1983
CARA	Conservation of Agricultural Resources Act 43 of 1983
CIB	DSI-NRF Centre of Excellence for Invasion Biology
DFFE	Department of Forestry, Fisheries and the Environment
FABI	Forestry and Agricultural Biotechnology Institute
IDP	Integrated Development Plan
IUCN	International Unit for the Conservation of Nature
LBSAP	Local Biodiversity Strategy and Action Plan
MEC	Member of Executive Council
NEMA	National Environmental Management Act 107 of 1998
NEMBA	National Environmental Management: Biodiversity Act 10 of 2004
NEMPAA	National Environmental Management: Protected Areas Act 57 of 2003
PSHB beetles	Polyphagous Shot Hole Borer beetles
SANBI	South African National Biodiversity Institute
SEMA	Specific Environmental Management Acts