



# **LANGEBERG MUNICIPALITY DRAFT ALIEN INVASIVE VEGETATION MANAGEMENT PLAN**

**2016 – 2022**

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## ***Project Partners***

Stakeholders, role players, organizations and agencies participating in the Langeberg Municipality Alien Invasive vegetation management plan include, but are not limited to:

- Langeberg Municipality directorates of Infrastructure (Engineering department), Community (Parks and Amenities department) and Corporate Services (Property administration department)
- Cape Winelands District municipality
- Working for Water agents, Central Breede Water Users Association
- The Department of Agriculture, Forestry and Fisheries
- The Department of Environmental Affairs
- CapeNature
- Langeberg Municipality Protected Areas Advisory Board
- Montagu Hacking Society
- McGregor Heritage Society
- Rock climbing SA Montagu

# EXECUTIVE SUMMARY

## 1. 1. *Legislative background*

The Regulations on the management of Listed Alien and Invasive Species under the National Environmental Management: Biodiversity Act [hereafter termed "NEMBA"] was promulgated on 1 August 2014 as Regulation Gazette No. 10244 in Volume 590 of the South African Government Gazette (Publication No. 37885). These regulations came into effect on 1 October 2014. (They are annexed to this report as Annex 1.)

In Chapter 4, "National Framework Documents", Section 8, entitled "Invasive Species Monitoring, Control and Eradication Plans", states *inter alia* that "The Minister must - (a) within one year of the date on which these regulations come into effect, develop guidelines for the development of Invasive Species Monitoring, Control and Eradication Plans for Listed Invasive Species as contemplated in section 76 of the Act".

The Listed Invasive Species were also published on 1 August 2014 as Government Notice No. 599 National Environmental Management: Biodiversity Act (10/2004): "Alien and Invasive Species List, 2014" also in Volume 590 of the South African Government Gazette (Publication No. 37886). In terms of the Act's Section 70 (1), 559 species /groups of species were listed (they are annexed to this report as Annex 2). It is the management of these species [hereafter termed "Listed Invasive Species"] that is covered by this Framework Guidelines Document. These Lists also came into effect on 1 October 2014. However, the Lists will be regularly updated, in order to correct nomenclature, and addressing other changes to the Listed Invasive Species. The first amended Lists are about to be published in the Government Gazette. Further updates will occur, and will be able to be found on the website after publication.

NEMBA Sections 75 and 76 are very specific in terms of who must develop these Invasive Species Monitoring, Control and Eradication Plans, what the plans must include and how they should be implemented, *i.e.*:

### ***"Control and eradication of listed invasive species"***

**75. (1)** *Control and eradication of a listed invasive species must be carried out by means of methods that are appropriate for the species concerned and the environment in which it occurs.*

**(2)** *Any action taken to control and eradicate a listed invasive species must be executed with caution and in a manner that may cause the least possible harm to biodiversity and damage to the environment.*

**(3)** *The methods employed to control and eradicate a listed invasive species must also be directed at the offspring, propagating material and re-growth of such invasive species in order to prevent such species from producing offspring, forming seed, regenerating or re-establishing itself in any manner.*

**(4)** *The Minister must ensure the coordination and implementation of programmes for the prevention, control or eradication of invasive species.*

**(5)** *The Minister may establish an entity consisting of public servants to coordinate and implement programmes for the prevention, control or eradication of invasive species.*

**76. (1)** *The management authority of a protected area preparing a management plan for the area in terms of the Protected Areas Act must incorporate into the management plan an invasive species control and eradication strategy.*

**(2) (a)** *All organs of state in all spheres of government must prepare an invasive species monitoring, control and eradication plan for land under their control, as part of their environmental plans in accordance with section 11 of the National Environmental Management Act. "*

**(b)** *The invasive species monitoring, control and eradication plans of municipalities must be part of their integrated development plans.*

**(3)** *The Minister may request the Institute<sup>1</sup> to assist municipalities in performing their duties in terms of subsection (2).*

**(4)** *An invasive species monitoring, control and eradication plan must include -*

**(a)** *a detailed list and description of any listed invasive species occurring on the relevant land;*

**(b)** *a description of the parts of that land that are infested with such listed invasive species;*

**(c)** *an assessment of the extent of such infestation;*

**(d)** *a status report on the efficacy of previous control and eradication measures*

**(e)** *the current measures to monitor, control and eradicate such invasive species; and*

**(f)** *measurable indicators of progress and success, and indications of when the Control Plan is to be completed."*

The Control Plans for every Protected Area and every other relevant land area managed by an Organ of State (including municipalities) have to be compiled and a copy of the plan submitted to SANBI within a year of these Framework Guidelines having been posted on the Department of Environmental Affairs' website on 30 September 2015.

## **1. 2.      *Site Description***

See attached map of the Langeberg Municipal area, which encompasses the towns McGregor, Ashton, Bonnievale, Robertson and Montagu and includes rivers such as the Breede, Keisie, Kingna, Hoops, Droë, Willem Nels, Cogmans, Houtbaai and Hoeks. The area also has a number of protected natural areas such as the Dassieshoek Nature, Montagu Mountain Reserve.

The prevailing vegetation type is semi-arid Karoo with parcels of Renosterveld.

## **1. 3.      *Reporting on the efficacy of previous control or eradication measures***

**Definition: Invasive alien species** are plants, animals, pathogens and other organisms that are non-native to an ecosystem, and which may cause economic or environmental harm or adversely affect human health.

### **Top 20 Invasive plant species in the Western Cape (\*Noted in the Langeberg municipal area)**

- Red Eye – *Acacia Cyclops*\*
- Long-leaved wattle – *Acacia longifolia*\*
- Black wattle – *Acacia mearnsii*\*
- Australia blackwood – *Acacia melanoxylon*\*
- Port Jackson willow – *Acacia saligna*\*
- Giant reed – *Arundo donax*\*
- Sponge-fruit saltbush – *Atriplex nummularia*
- Water hyacinth – *Eichhornia crassipes*\*
- Red River Gum – *Eucalyptus camaldulensis*\*
- Syringa – *Melia azerdarach*\*
- Oleander – *Nerium oleander*\*
- Wild tobacco – *Nicotiana glauca*\*
- Imbricate Prickly pear – *Opuntia imbricate*\*
- Sweet Prickly pear – *Opuntia ficus-indica*\*
- Honey mesquite – *Prosopis glandulosa*
- Castor oil plant – *Ricinus communis*\*
- Kariba Weed – *Salvinia molesta*
- Red Sesbania – *Sesbania punica*\*
- Spanish broom – *Spartium juncea*

### **Other noted in the Langeberg municipal area**

- Beefwood - *Casuarina cunninghamiana*
- Tumbleweed – *Salsola kali*
- Fountain grass – *Pennisetum setaceum*

Although some control alien invasive vegetation control projects have been carried out over the past 5 years, a definitive survey of the Langeberg Municipal area, indicating the degree of infestation, noting in general terms portions of the site that might be more or less heavily infested and also indicating those areas that are invasive-free, must be planned, budgeted for and implemented.

Invasive plant species, locations, and general abundance must be indicated, as well as obvious current ecological impacts, and potential future impacts if the invasives are not managed.

**Table: History of past control of Listed Invasive Species in the Langeberg Municipal Area**

Area and town	Type of Invasive	Method and agent	Success
Robertson: 4.5 km stretch of the Breede river, downriver from the bridge outside Robertson on the McGregor road	Eucalyptus spp. Port Jackson	Working for Water: Mechanical, manual and chemical eradication. The area was initially cleared mechanically and the stumps treated with herbicide to prevent regrowth. Started 3 July 2014. The regrowth seedlings on the site has since been since been chemically eradicated again and currently a full time EPWP team is regularly sweeping the area	98%
Robertson: Wonderfontein Eucalyptus coppice	Eucalyptus spp. Port Jackson	LM appointed contractor: Mechanical, manual and chemical eradication.	90%
Robertson: Willem Nels river from Wolfkloof bridge to confluence with Droe River	Eucalyptus spp. Port Jackson	LM appointed contractor: Mechanical, manual and chemical eradication.	75%
Robertson: Hoops River for Johan de Jongh Avenue to Wonderfontein	Port Jackson Spanish Reed	LM appointed contractor: Mechanical, manual and chemical eradication.	ongoing
Robertson: Droe River from Pecan Nut street and Droeheuwel play park to confluence with Willem Nels River	Port Jackson Spanish Reed Castor Oil plant	LM appointed contractor: Mechanical, manual and chemical eradication.	
Robertson: Irrigation dam in Waterkant Street	Water Hyacinth	Working for Water: Biological agents and herbicide	95%
Robertson: Van Zyl street irrigation dam	Ailanthus sp.	LM Parks department: Mechanical, manual and chemical eradication.	ongoing
Robertson: Dassieshoek dam and feed rivers	Eucalyptus spp. Populus Spp.	CWDM appointed contractor: Mechanical, manual and chemical eradication.	ongoing
Montagu: Badkloof gorge and Keisie river stretch in the Montagu Mountain Reserve to the Old Fort in Cogmanskloof	Port Jackson Spanish Reed Castor Oil plant	LM appointed contractor: Mechanical, manual and chemical eradication.	ongoing
Bonnievale: Seasonal river in Roos Street	Port Jackson Spanish Reed Castor Oil plant	LM appointed contractor: Mechanical, manual and chemical eradication.	ongoing
McGregor: Houtbaai and Hoeks River floodplains	Port Jackson	CWDM appointed contractor: Mechanical, manual and chemical eradication.	To be budgeted for

**Table: Control actions planned by other stakeholders in the Langeberg Municipal Area**

Area and town	Type of Invasive	Method and agent
Robertson: 0.5 km stretch of the Breede river, upstream from the bridge outside Robertson on the McGregor road, up to the confluence of the Hoops River	Eucalyptus spp. Port Jackson	Working for Water: Mechanical, manual and chemical eradication. Planned for the following 2 years, starting 2018
Montagu: Keisie, Kingna and Cogmans Rivers	Port Jackson Castor Oil plant Sesbania Wild Tobacco	Montagu hacking Society Mechanical, manual and chemical eradication. Ongoing

# INVASIVE SPECIES MANAGEMENT TARGETS AND TIMELINES

## 2.1. Identifying Invasive Plant Management Priorities

Table: Preliminary Listed invasive vegetation species per town

Town	Species name	Common name	NEMBA category	Estimated % cover	Prioritization(/10)	Risk of invasion
McGregor	<i>Acacia saligna</i>	Port Jackson	1b		8	High
	<i>Arundo donax</i>	Giant reed	1b		4	Moderate
	<i>Sesbania punicea</i>	Sesbania	1b		2	High
Bonnivale		Eucalyptus			4	Moderate
	<i>Acacia saligna</i>	Port Jackson	1b		8	High
	<i>Ricinus communis</i>	Castor Oil Plant	2			Moderate
Robertson	<i>Arundo donax</i>	Giant reed	1b		4	High
	<i>Acacia saligna</i>	Port Jackson	1b		8	High
	<i>Prosopis glandulosa</i>	Honey mesquite	1b		10	Very high
	<i>Ailanthus altissima</i>	Tree of Hell	1b		10	Very high
	<i>Ricinus communis</i>	Castor Oil Plant	2			High
	<i>Eichhornia crassipes</i>	Water Hyacinth	1b		10	Very high
	<i>Tumbleweed</i>	Salsola kali	1b			High
	<i>Beefwood</i>	Casuarina cunninghamiana	1b			High
	<i>Pennisetum</i>	Fountain Grass	1b		8	High
Ashton		Eucalyptus			4	Moderate
	<i>Acacia saligna</i>	Port Jackson	1b		8	High
	<i>Arundo donax</i>	Giant Reed	1b		4	Moderate
	<i>Nicotiana glauca</i>	Wild tobacco	1b			High
	<i>Pennisetum setaceum</i>	Fountain grass 1b				Moderate
	<i>Arundo donax</i>	Giant reed	1b		4	Moderate
Montagu	<i>Ricinus communis</i>	Castor Oil Plant	2			High
	<i>Sesbania punicea</i>	Sesbania	1b		2	High
	<i>Tumbleweed</i>	Salsola kali	1b			High
	<i>Nicotiana glauca</i>	Wild tobacco	1b			High

McGregor: Port Jackson on the Houtbaai and Hoeks River floodplains

Port Jackson at the Small Scale farmers' allotments at the town entrance

Spanish reed at the Plakkerskamp

Bonnivale: Eucalyptus at Myrtle Rigg

Port Jackson at the New Cemetery area

Robertson: Port Jackson at the Small Scale farmers' allotments at the Breede River

Ailanthus in the Keerom, Wesley, Waterkant Street areas

Montagu: Spanish reed at the Badkloof gorge and Keisie river stretch in Joubert Park

Ashton: Fountain grass in the Conradiedorp cemetery /reservoir area along to the Cogmanskloof reservoir area

### Methods of control

**Biological** – Some alien plants have natural enemies, such as insects and diseases that only affect a specific species. The controlling agents (beetles, viruses) are sourced from the country of origin and released here among an invasive species to control it.

**Manual** – Young or small invaders can be removed from the soil by hand. The plants should be stacked responsibly to prevent regrowth.



**Mechanical** – Plants and trees can be chopped down with a hatchet, panga, bowsaw or chainsaw. Trees can also be killed by removing a 30–40cm strip of bark around their trunks (known as “ring-barking”).

**Chemical** – Two or more methods can be used at the same time. For example, ring-barking and then spraying a registered herbicide on the stump.

### **2019 / 2020**

- Compile a business plan for Capital budget funding to employ a contractor for the clearing of the Houtbaai and Hoeks river flood plains in McGregor
- Compile a business plan for Capital budget funding for a professional survey and mapping of Alien Invader vegetation in the Langeberg municipal area
- Apply for a permit for the Beefwood trees in Droëheuvel Cemetery and at Dassieshoek Cottage 1
- Continue vegetation rehabilitation of the Breede River cleared stretch, Robertson
- Monitor and treat, if necessary, the Water hyacinth reoccurrence on the irrigation dam in Waterkant Street, Robertson and other municipal dams
- November to January: Cut and remove the Giant reed in all river courses that the municipality is responsible for
- February to May: Treat the Giant reed in all river courses that the municipality is responsible for with appropriate herbicide
- Monitor and treat the Eucalyptus regrowth in the Clairvaux copse
- Remove the Port Jacksons around the Ashton Conradiedorp cemetery and reservoir
- Treat the Fountain grass around the Ashton Conradiedorp cemetery and reservoir with herbicide
- Monitor the Robertson Waterkant / Wesley street area for Ailanthus seedlings and destroy
- Initiate training sessions for municipal staff, small scale farmers, and interested public to identify Alien Invader vegetation and apply herbicides/practice other methods of control
- Initiate local media awareness campaigns about Alien Invader vegetation

### **2020 / 2021**

- Appoint a contractor for the clearing of the Houtbaai and Hoeks river flood plains in McGregor
- Appoint a consultant to survey and map all Alien Invader vegetation in the Langeberg municipal area
- Continue the vegetation rehabilitation of the Breede River cleared stretch, Robertson
- Monitor and treat, if necessary, the Water hyacinth reoccurrence on the irrigation dam in Waterkant Street, Robertson and other municipal dams
- November to January: Cut and remove the Giant reed in all river courses that the municipality is responsible for
- February to May: Treat the Giant reed in all river courses that the municipality is responsible for with appropriate herbicide
- Monitor and treat the Eucalyptus regrowth in the Clairvaux copse
- Monitor and treat the Port Jackson regrowth around the Ashton Conradiedorp cemetery and reservoir
- Monitor and treat the Fountain grass regrowth around the Ashton Conradiedorp cemetery and reservoir with herbicide
- Monitor the Robertson Waterkant / Wesley street area for Ailanthus seedlings and destroy
- Initiate training sessions for municipal staff, small scale farmers, and interested public to identify Alien Invader vegetation and apply herbicides/practice other methods of control
- Continue the local media awareness campaigns about Alien Invader vegetation

### **2021 / 2022**

- Review the Alien Vegetation Invader Control Plan
- Appoint a contractor for the follow-up clearing of the Houtbaai and Hoeks river flood plains in McGregor
- Begin to implement the recommendations of the formal Alien Vegetation Invader Control Plan
- Continue the vegetation rehabilitation of the Breede River cleared stretch, Robertson
- Monitor and treat, if necessary, the Water hyacinth reoccurrence on the irrigation dam in Waterkant Street, Robertson and other municipal dams

- November to January: Cut and remove the Giant reed in all river courses that the municipality is responsible for
- February to May: Treat the Giant reed in all river courses that the municipality is responsible for with appropriate herbicide
- Monitor and treat the Eucalyptus regrowth in the Clairvaux copse
- Remove the Port Jacksons around the Ashton Conradiedorp cemetery and reservoir
- Monitor and treat the Fountain grass regrowth around the Ashton Conradiedorp cemetery and reservoir with herbicide
- Monitor the Robertson Waterkant / Wesley street area for Ailanthus seedlings and destroy
- Initiate training sessions for municipal staff, small scale farmers, and interested public to identify Alien Invader vegetation and apply herbicides/practice other methods of control
- Continue the local media awareness campaigns about Alien Invader vegetation

### ***Way Forward: Future plan (2016 onwards)***

- In future, the specifications of all management plans commissioned for natural areas must include Alien Invader Vegetation management plans
- A new municipal bylaw will need to be formulated and promulgated to enforce Alien Invader Vegetation control on private properties within the municipal boundaries.

## **REFERENCES**

1. <http://invasives.org.za/legislation/what-does-the-law-say>
2. [https://www.environment.gov.za/.../nemba10of2004\\_alienandinvasive\\_speciesrelist.2](https://www.environment.gov.za/.../nemba10of2004_alienandinvasive_speciesrelist.2)
3. [https://www.environment.gov.za/.../nemba10of2004\\_alienandinvasive\\_speciesregulations](https://www.environment.gov.za/.../nemba10of2004_alienandinvasive_speciesregulations)
4. <https://www.invasives.org.za/files/.../NEMBA%20Guidelines%20for%20Control%20Plans.pdf...>