



## 2014 Biodiversity Planning Forum

13–16 May, Mpekweni Beach Resort, Eastern Cape

An assessment of the invasive status of *Berberis L.* in  
South Africa and potential control methods

Authors:

Dan'sile Cindi and Jan-Hendrik Keet  
South African Biodiversity Institute  
Invasive Species Programme - Pretoria

***Berberis julianae* C. K. Schneid**, also known as the **Wintergreen barberry**

- A fast growing evergreen or perennial shrub. It is a hardy, upright, multi-stemmed plant which bears lots of twigs and forms dense shrub
- Shade-tolerant species and has the ability to alter soil chemistry, to the detriment of native vegetation





# Origin & Introduction to S.A

- *B. julianae* is native in central China, South Korea and Japan
- Commonly planted as hedges to form impenetrable barriers due to their spiny nature and as such are firmly established in the horticultural trade
- Recently listed as invasive plant in the district Columbia USA.
- Only four S.A records of *Berberis* species in the SAPIA database
- Two new populations confirmed near KwaZulu Natal & Free State

# SAPIA Records

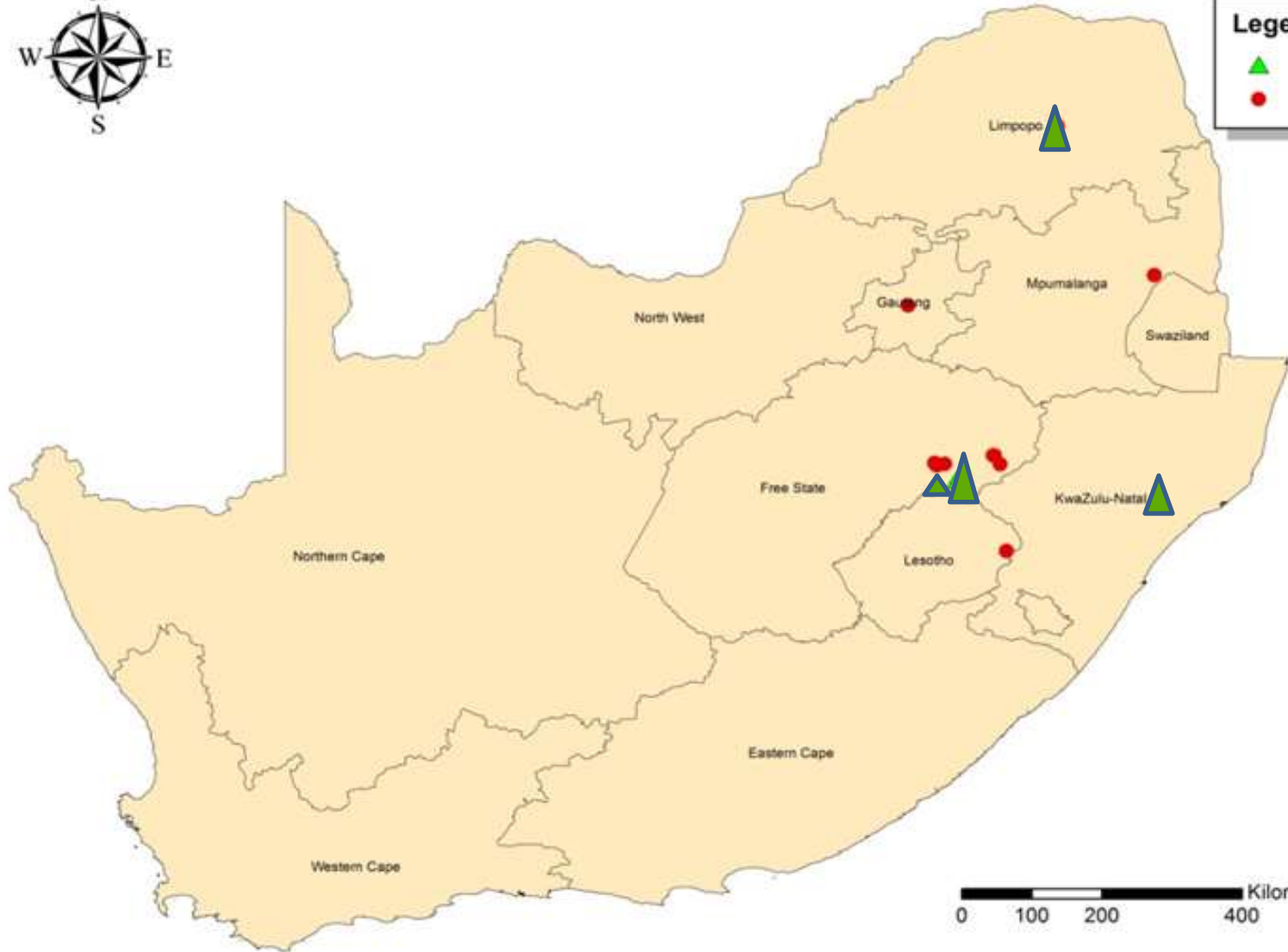
Species	Locality	Date
<i>Berberis cf. chitria</i> Ker Gawl.	Haenertsburg district; Woodbush State Forest	10/2010
<i>Berberis julianae</i> C.K.Schneid.	36 km from Komatipoort on road to Stegi	03/1979
	Golden Gate National Park opposite petrol station	04/2010
<i>Berberis sp.</i>	Barberton - Shiyalongubu Dam	10/2010

# Possible localities of *Berberis* in South Africa



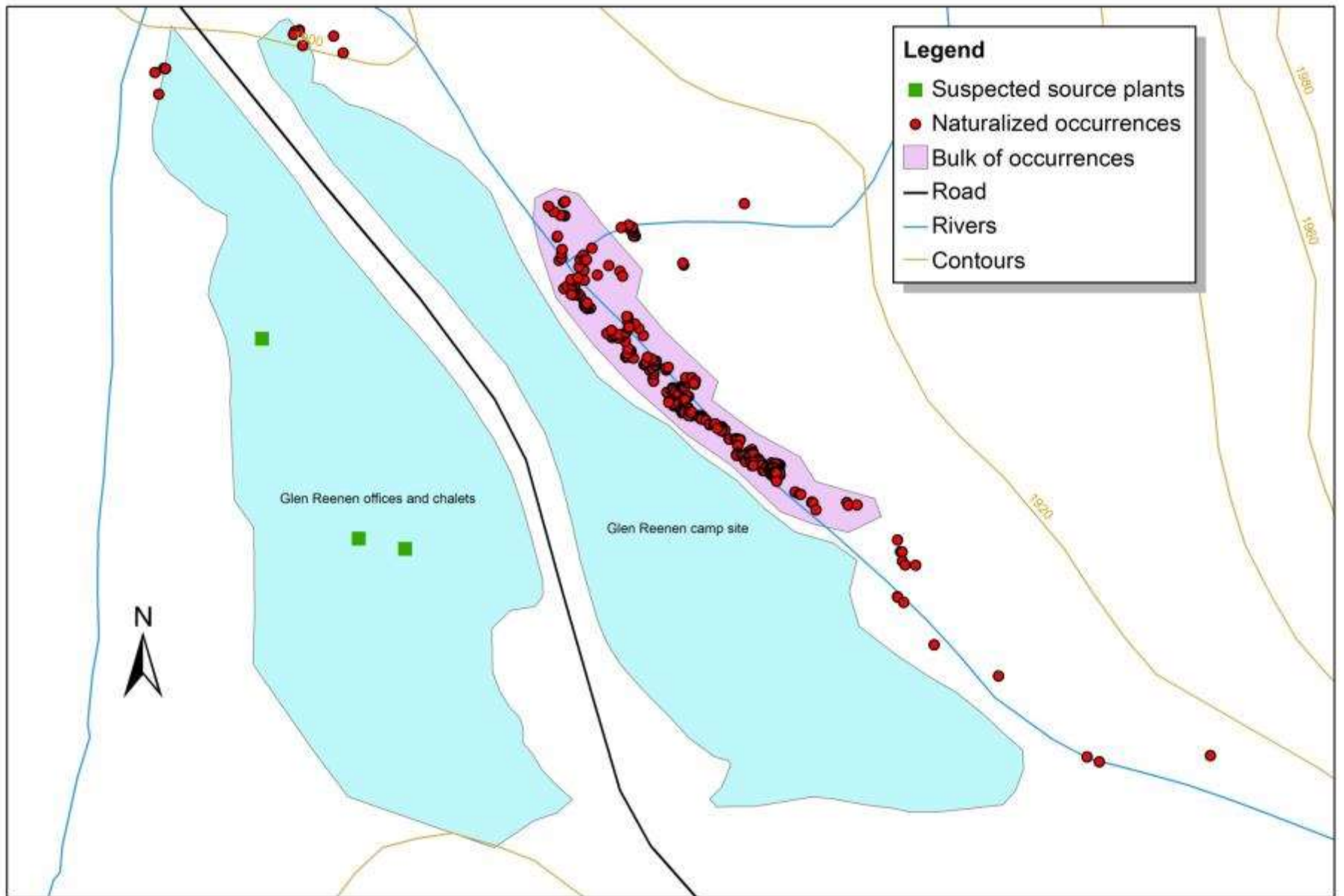
**Legend**

- ▲ Confirmed
- Pending



# Objectives

- To assess the invasive potential of the species
- To determine the threats
- To map all known localities
- Eradication target vs management target
- To list *Berberis* species under legislation



0 35 70 140 Meters



## About Berberis

Several species of *Berberis* are popular garden shrubs with ornamental features including attractive leaves, yellow flowers and red or blue-black berries. Low-growing *Berberis* plants are also commonly planted as pedestrian barriers. Taller-growing species are used as hedges to provide security to properties as these very dense, viciously spiny shrubs make very effective barriers impenetrable to intruders. Invasive *Berberis* species can have negative environmental impacts such as altering soil chemistry, lowering weed carrying capacity, serving as alternate hosts for stem rust of wheat and preventing access to watercourses when occurring in dense thickets. There are approximately 450 – 500 species of *Berberis*. Featured below are *B. julianae*, *B. thunbergii*, *B. darwinii*, *B. vulgaris* and *B. aristata*.

### *Berberis julianae*

Wintergreen barberry

The wintergreen barberry is native to central China and was introduced into South Africa for use in borders and hedges due to its spiny nature. Naturalized populations have recently been found in Golden Gate Highlands National Park in the Eastern Free State where it is starting to invade forested habitats that occur in ravines and along watercourses.

#### What does it look like?



The leaves are clustered at the nodes, have a spiny margin and are dark green in appearance with a leathery texture.

The flowers are yellow and occur in dense clusters.



Photo credit: Jan Hendrik Faust

### *Berberis thunbergii*

Japanese barberry

The Japanese barberry is a widespread invasive species in the USA, particularly in the forests of the North East, and there is a concern that it might also become a problem in South Africa.

#### What does it look like?



The cultivated *Berberis thunbergii* 'Atrorubra' has characteristic reddish-purple leaves.



Red fruits of *Berberis thunbergii* 'Atrorubra'



The flowers can be solitary or can occur in clusters (umbels).  
Photo credit: Louis-M Landry

### *Berberis darwinii*

Darwin's barberry

Darwin's barberry is native to southern Chile and Argentina. It has invaded a wide range of environments in New Zealand and is a serious threat to indigenous ecosystems and biodiversity conservation. In South Africa, the invasive potential of Darwin's barberry and the threat it poses needs to be assessed and there are concerns that it may be as damaging here as in New Zealand.

#### What does it look like?



Darwin's barberry has a drooping inflorescence of yellow flowers.

Photo credit: Dr Zoya Anisova



The fruits are bluish-black, round and fleshy.

Photo credit: John Heylen

### *Berberis vulgaris*

Common / European barberry

The common barberry occurs naturally in Europe, North west Africa and Western Asia. In the USA the common barberry has been linked to failing wheat crops because it serves as an alternate host for stem rust (*Puccinia graminis* f. sp. tritici). It is able to invade grasslands, savannas, thickets and dense woodlands or forests. Therefore, the possibility exists for the common barberry to invade indigenous ecosystems of South Africa.

#### What does it look like?



Yellow flowers of the common barberry.

Photo credit: Dr Anadij Trnicky



Characteristic raceme inflorescences showing the bright red, fleshy fruits that appear after flowering.

Photo credit: Dr Anadij Trnicky

### *Berberis aristata*

Indian barberry / Tree turmeric

The Indian barberry is native to the Himalayas and Nepal and has been recorded in the Woodbush Forest Reserve near Dariesen in the Limpopo province. It has invaded some of the riverbanks and is starting to form dense stands in certain parts.

#### What does it look like?



*Berberis aristata* has a drooping, raceme-like inflorescence with yellow flowers.

Photo credit: Jan Hendrik Faust



**Nip them in the bud:**  
*Emerging Invasive Alien Plants*  
Early Detection and Rapid Response Programme

21/03/2014 10:48

# Weed Risk Assessment

- The Australian weed risk assessment protocol was used to assess the invasiveness.
- Assessment score of **20** - Any value above 6 indicates high risk. Thus, *B. julianae* would fail a pre-border risk evaluation.

# Planned activities

- Seed viability tests
- Follow up visit
- Bioclimatic modelling
- Weed risk assessment new located species *B. aristata* (Limpopo)
- DNA sequencing
- Survey of “new sighting” reported to the programme.
- Trial clearing activities

# What you can do to help?

- E-mail: [d.cindi@sanbi.org.za](mailto:d.cindi@sanbi.org.za) and [jhkeet@hotmail.com](mailto:jhkeet@hotmail.com)
- Alternatively for more information please email us at [invasivespecies@sanbi.org.za](mailto:invasivespecies@sanbi.org.za)
- Acknowledgements to our funders



Environmental Affairs  
Agriculture, Forestry and Fisheries  
Water Affairs



THANK YOU FOR YOUR ATTENTION

