

# SAPIA NEWS

SOUTHERN AFRICAN PLANT INVADERS ATLAS

January 2010

ARC-Plant Protection Research Institute

No. 14



## 2010 is here!

Yes, we all know that **2010** marks the soccer world cup but did you know that it is the **International Year of Biodiversity**? The soccer world cup will come and go; some will benefit; many will not—but biodiversity benefits us all and is essential for our existence—today and in the future.

**The International Year of Biodiversity (IYB)** was declared by the United Nations General Assembly. This global public communication initiative will be driven by the Convention for Biological Diversity (CBD). See page 2 for more information.

### Inside this issue:

2010 International Year of Biodiversity	1 & 2
Pompom weed in KZN Drakensberg	1
Invasive alien plants at foothills of KZN Drakensberg	3 & 4
Emerging ornamental weeds Goldencup St. Johnswort Japanese honeysuckle Ash-leaved maple	5

**We depend on biodiversity for everything we need and value from the Earth.**

**Biodiversity loss is driven by habitat destruction, unsustainable harvesting, invasive species, climate change and pollution. (Dr Bob Scholes, CSIR)**



This issue of SAPIA News focuses on invasive alien species at the foothills of the Drakensberg Mountains in KwaZulu-Natal. The uKhahlamba / Drakensberg Park was listed by UNESCO in 2000 as a World Heritage Site. The park is also in the List of Wetlands of International Importance (under the Ramsar Convention). The park is rich in biodiversity. Threats include invasive alien species and overgrazing.

You are invited to participate in the SAPIA phase II project.

Submit records online at :  
Weeds and Invasive Plants website  
[www.agis.agric.za/wip](http://www.agis.agric.za/wip)

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Photos by Lesley Henderson  
unless otherwise acknowledged

**All the SAPIA Newsletters are posted at WIP  
and can be downloaded free of charge**

## Pompom weed in KZN Drakensberg

Pompom weed was recorded for the first time in January 2010 in the Champagne Valley at the foothills of the Drakensberg Mountains in KwaZulu-Natal. The plants were seen on the road verge and since they were so far from any other known pompom site they were probably escapes from cultivation.

Pompom weed is a serious threat to the conservation of grasslands and is a prohibited plant. For more information on pompom weed see the ARC website ([www.arc.agric.za](http://www.arc.agric.za))



## 2010 International Year of Biodiversity

### Official IYB 2010 Messages from the Convention on Biological Diversity

People are part of nature's rich diversity and have the power to protect or destroy it.

Human activity is causing the diversity of life on earth to be lost at a greatly accelerated rate. These losses impoverish us all and damage the life support systems we rely on every day. But we can prevent them.

Biodiversity, the variety of life on earth, is essential to sustaining the living networks and systems that provide us all with health, wealth, food, fuel and the vital services our lives depend on.

**2010 is the International Year of Biodiversity; let's reflect on our achievements to safeguard biodiversity and focus on the urgency of our challenge for the future. Now is the time to act.**

Background and more information at::

[www.cbd.int/2010](http://www.cbd.int/2010) - official IYB 2010 web site of the Convention on Biological Diversity

[www.countdown2010.net](http://www.countdown2010.net) - official IYB 2010 web site of the International Union for the Conservation of Nature



A precious piece of intact natural vegetation along the Eastern Cape coast.

**Invasive alien species are a threat to biodiversity**

The Indian Ocean Coastal Belt is the most threatened vegetation unit in South Africa. Much of the vegetation has been totally destroyed or transformed by urbanization, industrialization, mining activities and invasive alien plants.

#### What can we do in urban areas?

We need to conserve precious tracts of natural vegetation—especially by preventing their destruction by property developers.

Everyone with a garden can contribute to conserving biodiversity by cultivating indigenous plants and eradicating invasive alien plants.

Contact the 'Green Scorpions' to report environmental transgressions. 24 hour Environmental Crimes and Incident Hotline on 0800 205 005



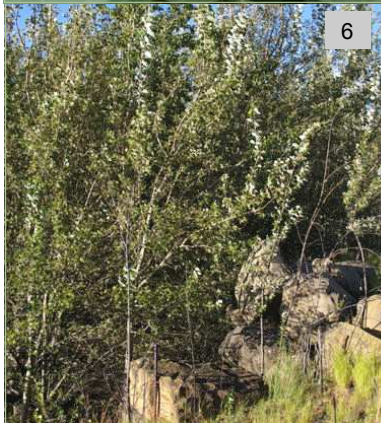
A degraded patch of coastal vegetation invaded by invasive alien ornamentals at Umkomaas on the KZN south coast

## Invasive alien plants at foothills of KZN Drakensberg

**The most prominent species are:** American bramble (*Rubus cuneifolius*) (photo 1) which forms vast stands in the grasslands; black wattle (*Acacia mearnsii*) (photo 2), silver wattle (*A. dealbata*) and green wattle (*A. decurrens*) invade grasslands and watercourses. Bug weed (*Solanum mauritianum*) (photo 3) invades forest margins and watercourses; orange firethorn (*Pyracantha angustifolia*) and Himalayan firethorn (*P. crenulata*) (photo 4) invade grasslands, rocky ridges and watercourses. Weeping willow (*Salix babylonica*), crack willow (*S. fragilis*) (photo 5) and grey poplar (*Populus xcanescens*) (photo 6) invade watercourses. Spear thistle (*Cirsium vulgare*) (photo 7) and purple top (*Verbena bonariensis*) (photo 8) are widespread along roadsides, other disturbed sites and in moist grasslands.

**Other species include:** Cotoneasters (*Cotoneaster* spp.), similar to the firethorns but lacking spines, cannas (*Canna xgeneralis*) (photo 9) and *C. indica*, Chinese privet (*Ligustrum sinense*) (photo 10), evening primroses (*Oenothera* spp.) (photo 11), blue periwinkle (*Vinca major*) (photo 12), Scotch broom (*Cytisus scoparius*) (photo 13).

**Emerging weeds:** see page 4.



## Emerging ornamental weeds

### Goldencup St. Johnswort

Goldencup St. Johnswort (*Hypericum patulum*) is a shrub with arching to spreading branches up to 1.5 m tall. It is native to China and is a member of the family Hypericaceae or Clusiaceae.

Young stems are red and 4-angled. Leaves are bright green, paler beneath, lack net-veins, shortly stalked, 15–60 mm long x 5–30 mm wide. Flowers occur in terminal clusters; are golden yellow, 25–40 mm across, ± deeply cupped, styles are free and outcurved towards apex. Fruits are ovoid capsules 8–10 mm long. **NB** the indigenous *H. roeperianum* is distinguished by its leaves with net-veins and styles that are fused.

Cultivated as an ornamental and invades forest margins, gullies and roadsides. The earliest naturalized records date back to the 1980's in the Impendle District of southern KZN.

**Legislation:** None.



### Japanese honeysuckle

Japanese honeysuckle (*Lonicera japonica*) is a semi-evergreen or evergreen climber up to 9 m high. It is native to temperate east Asia (Japan, Korea, China) and is in the family Caprifoliaceae.

Its stems are hollow, twining and hairy. Leaves are dark green, slightly hairy beneath, in opposite pairs, 30–90 mm long. The flowers are fragrant, white, ageing to yellow, tubular-shaped and two-lipped, up to 40 mm long, in axillary pairs. Fruits are black berries.

It has been cultivated as an ornamental plant and has been recorded as naturalized in cool, moist regions, particularly in wood-

land, forest edge or streambank habitats.

It is dispersed by birds that eat the berries. Its vigorous climbing growth enables it to smother other plants.

**Legislation:** It is a proposed category 3 invader under the revised CARA and NEMBA. According to the proposed regulations, existing plants may remain but must be prevented from spreading; no new cultivation or sale of plants is permitted.



### Ash-leaved maple

Ash-leaved maple (*Acer negundo*) is a deciduous tree 10 to 20 m high with a spreading crown. It is native to North America and belongs to the family Aceraceae.

Its leaves are bright green, turning yellow in autumn, pinnate, mostly with 5, coarsely toothed leaflets. The flowers are greenish yellow, in drooping sprays up to 200 mm long. Fruits are yellowish-brown, paired, winged nutlets (samaras), in drooping sprays.

It is cultivated for ornament and invades forest margins and streambanks in the

cooler regions of South Africa.

**Legislation:** It is a proposed category 3 invader under the revised CARA and NEMBA. According to the proposed regulations, existing plants may remain but must be prevented from spreading; no new cultivation or sale of plants is permitted.

CARA = Conservation of Agricultural Resources Act

NEMBA = National Environmental Management Biodiversity Act



# ARC-PPRI, WEEDS DIVISION

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The Weeds Research Division of the Plant Protection Research Institute is responsible for research on the ecology and control of invasive alien plants in South Africa. These plants were introduced either intentionally (e.g. for ornamental use or agroforestry purposes), or accidentally (e.g. in livestock feed) and now threaten biodiversity and agriculture. In addition, they reduce run-off from water catchments, thus diminishing flow in streams, and adversely affect the quality of life of communities.

- Biological control
- Chemical control
- Bioherbicides
- Integrated control
- Monitoring the emergence and spread of invasive alien plants

We are on the Web:

[www.arc.agric.za](http://www.arc.agric.za)

see PPRI Newsletter

for current news from the  
Weeds Research Division

### Read PPRI Newsletter No. 82 for the following news from the Weeds Research Division:

- SAPIA surveys in the south-western Cape
- Refurbished weed pathogen quarantine facility
- Weed biocontrol at the Sunday Tribune Garden and Leisure Show

## Biological control of invasive plants



**Black wattle (*Acacia mearnsii*) and the seed-feeding weevil (*Melanterius maculatus*)** Photos: L. Henderson and F. Impson

Biological weed control is the use of natural enemies to reduce the vigour or reproductive potential of an invasive alien plant. The principle is that plants often become invasive when they are introduced to a new region without any of their natural enemies. The alien plants therefore gain a competitive advantage over the indigenous vegetation, because all indigenous plants have their own natural enemies that feed on them or cause them to develop diseases. Biological control is an attempt to introduce the alien plant's natural enemies to its new habitat, with the assumption that these natural enemies will remove the plant's competitive advantage until its vigour is reduced to a level comparable to that of the natural vegetation. Natural enemies that are used for biological control are called biocontrol agents.

The potential risk posed by a candidate biocontrol agent is determined by biocontrol researchers through extensive host range studies (specificity tests) that are carried out in a quarantine facility. These trials determine the range of plants that a potential biocontrol agent is able to use as host plants throughout its life cycle, as well as its host plant preferences. Permission to re-

lease a biocontrol agent will be sought only if the host-specificity tests prove without doubt that the potential agent is sufficiently host-specific for release in this country. To be regarded as sufficiently host-specific, the candidate agent must be either monophagous (i.e. the insect feeds on only one plant species, the target weed in this case) or it could have a slightly wider host range, provided that none of the additional host plants occur in South Africa or surrounding countries, either as indigenous or introduced crop plants.

South Africa is regarded as one of the world leaders in the field of biological control of invasive alien plants. Since the 1930s we have brought 27 invasive alien plant species under biological control. In the process, 99 species or biotypes of natural enemies were released, 74 of which became established. Remarkable successes have been achieved with either controlling or reducing the invasive potential of many invasive plants including cacti, aquatic weeds, Australian wattles, chromolaena and lantana. Seed feeders feature strongly in many of our projects. Tested and safe biocontrol agents are distributed in co-operation with the *Working for Water* Programme of the Department of Water Affairs and Forestry.