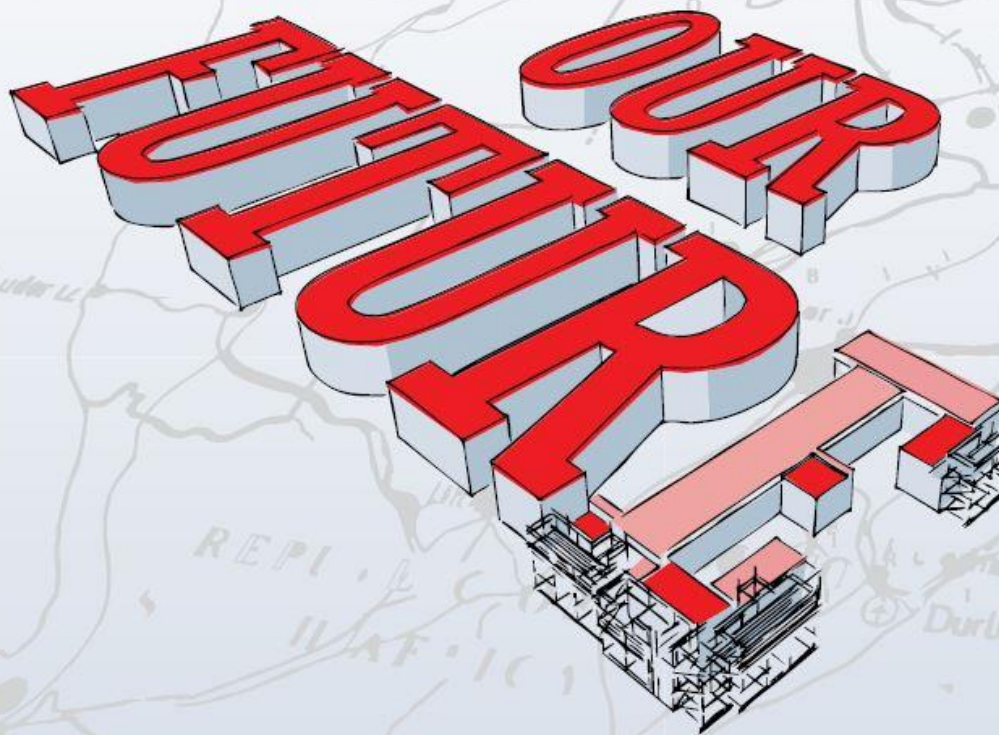


The role of resource mapping and monitoring

Our future -
make it work



NDP (2012)

Critical actions (10):

- Interventions to ensure environmental sustainability and resilience to future shocks.
- A strategy to address poverty and its impacts by broadening access to employment, strengthening the social wage...and raising rural incomes.

- ‘**Sustainable**’, in relation to the use of a biological resource, means the use of such resource in a way and at a rate that-

- (a) would not lead to its long-term decline;

- (b) would not disrupt the ecological integrity of the ecosystem in which it occurs; and

- (c) would ensure its continued use to meet the needs and aspirations of present and future generations of people.

Act 10 of 2004 (NEMBA)



...Sustainability of bioresource extraction

- **Regenerative and/or productive capacity**
- **Distribution**
- **Abundance**
- **Population structure**
- **Accessibility / Ownership**
- **Autecology**
- **Management**
- **Monitoring**





Western Cape
Government
Environmental Affairs and
Development Planning

BETTER TOGETHER.



THE WILD HONEYBUSH HARVESTING FIELD GUIDE

Using Google Earth, a farmer has mapped four Bergtee patches on his farm and calculated the area per patch, to give a total of 20 ha of Bergtee veld. He has done a survey walk of about 100 m in each patch, to get a density figure for approximately 200 m² which converts to an average of 1000 plants per hectare. He has harvested a sample of 30 plants and weighed each plant to get an average weight per plant of 0.45 kg.

Calculating the potential harvest yield

Total area: 20 ha	20 ha x 1000 plants x 0.45 kg =
Ave. plant density: 1000	9000 kg
Ave weight of plant: 0,45 kg	
2 year harvest interval, 50% of plants cut: 4500 kg	
4 year harvest interval, 80% of plants cut: 7200 kg	

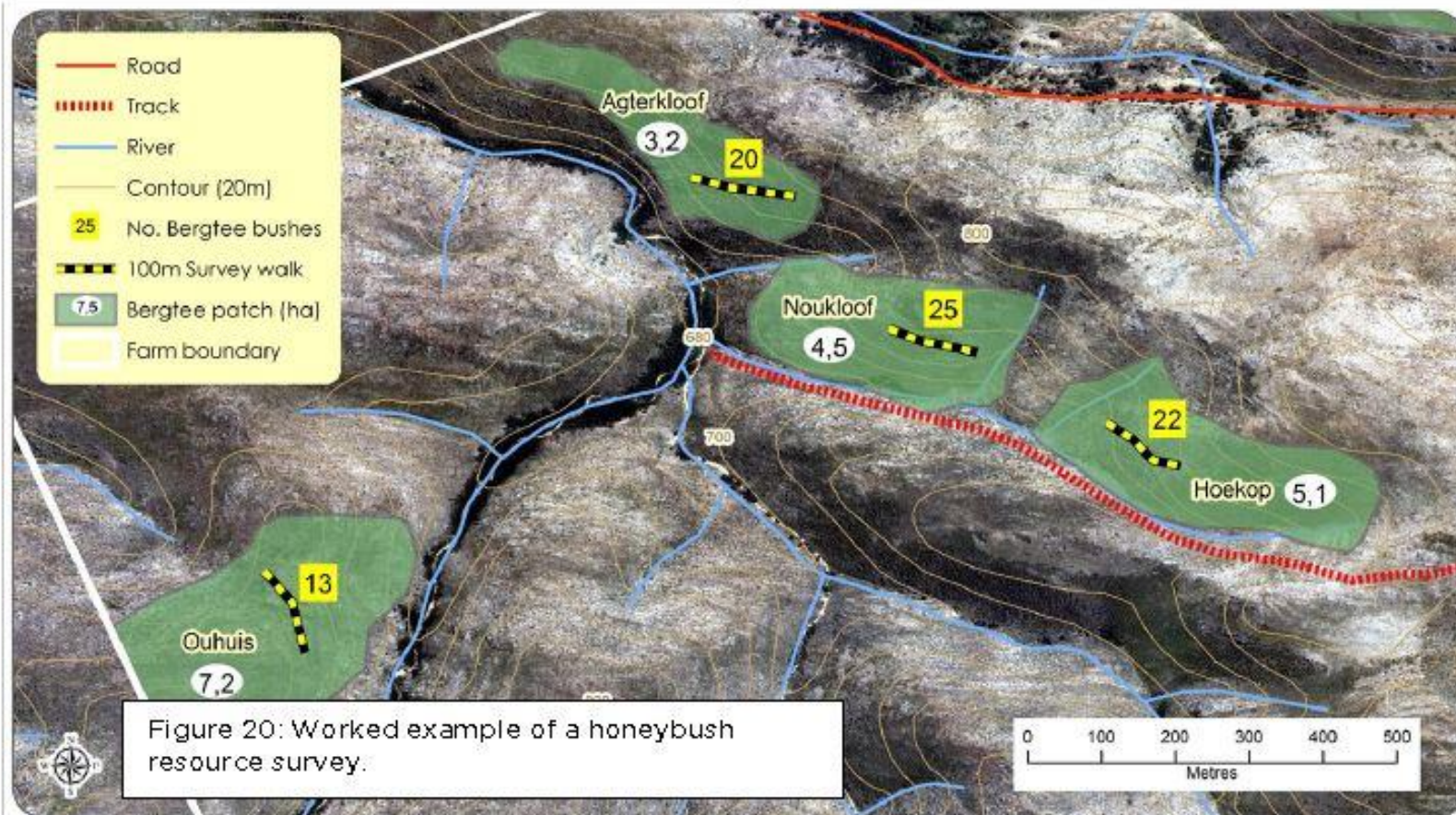


Figure 20: Worked example of a honeybush resource survey.

Harvesting Guidelines for *Pelargonium* *sidoides*



Based on the Recommendations
in the Biodiversity Management
Plan for *Pelargonium sidoides*
Government Gazette No 36411
of 26th April 2013

Designed by Parceval • June 2018 version #1



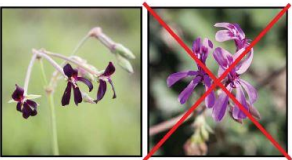
Remove all soil from the roots.



Break off the leaves together with a little bit
of root.

What can be harvested?

Only *Pelargonium sidoides* – with the dark
red to black flowers – must be harvested. The
pink flowered *Pelargonium reniforme* must
not be harvested. Make sure you know which
species you are harvesting!



Harvest only the main root and leave the
smaller side roots behind – they will grow into
mature roots over time and can be harvested
in the future.

Roots must be red to dark red when broken –
light coloured roots will not be purchased as
they are to young and do not make good
medicine.



Remove some of the leaves from the root.



Re-plant the leaves and root. Make sure that
the hole is fully closed again. Compact the soil
around the plant lightly with your foot.

When can it be harvested?

Pelargonium can be harvested all year round.
It is however preferably harvested in the
rainy months of October to May when plants
can be replanted easily and will re-sprout for
future harvesting.

How must it be harvested?



Use a pick, a hoe or a fork to dig up the plant.

Be careful not to disturb too many plants and
soil around the plant you harvest. If other
plants are affected, re-place them into the
harvesting hole and compact the soil around
them so they can continue to grow.



How do I transport and store the *Pelargonium*?

Place the roots into a clean PE woven bag and
take to your home.



At your home, store the *Pelargonium* in a shady
and cool place without direct sunlight. Open the
bag so that the roots can breathe. Mould will
reduce the quality and the price paid for the
roots.

Do not store for more than 1 week – make sure
they are collected regularly. The bags should be
transported in a closed vehicle e.g. bakkie with
canopy to avoid any contamination or damage.

How often and how long can I harvest *Pelargonium*?

Mostly, after 2-3 years of harvesting in an area,
the number of mature and therefore harvestable
plants are becoming less. This is a good time to
stop harvesting. Ideally, the next harvesting in
the same area takes place 7 – 10 years later
again.



environmental affairs
Department
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

SCHEDULE

Biodiversity Management Plan for *Pelargonium sidoides* DC.

Compiled by David Newton¹, Domitilla Raimondo², Lisebo Motjotji¹, and Christine
Lippal¹ in extensive collaboration with the Pelargonium Working Group³.



¹ TRAFFIC East/Southern Africa, Private Bag X11, Parkview 2122, South Africa.

² South African National Biodiversity Institute, Private Bag X101, Pretoria 0001, South Africa.

³ The Pelargonium Working Group, started in 2007, is represented by government, industry
and the NGO sector. The group was chaired during the process of drawing up this
management plan by the South African National Biodiversity Institute.

GOVERNMENT NOTICE

DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND TOURISM

No. R. 214

3 March 2009

NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT, 2004 (ACT 10 OF 2004)

NORMS AND STANDARDS FOR BIODIVERSITY MANAGEMENT PLANS FOR SPECIES

I, Marthinus Christoffel Johannes van Schalkwyk, Minister of Environmental Affairs and Tourism, hereby publish the Norms and Standards for Biodiversity Management Plans for Species in terms of section 9(1)(a)(i) and 43 of the National Environmental Management: Biodiversity Act, 2004 (Act no 10 of 2004), as contained in the Schedule.

Marthinus van Schalkwyk

Social and Ecological Characteristics of an Expanding Natural Resource Industry: *Aloe* Harvesting in South Africa

A. MELIN^{*,1,2,3}, O. M. GRACE⁴, G. D. DUCKWORTH⁵, J. S. DONALDSON^{1,2}, AND E. J. MILNER-GULLAND^{3,6}

¹Kirstenbosch Research Centre, South African National Biodiversity Institute, Cape Town, South Africa

²Department of Biological Sciences, University of Cape Town, Cape Town, South Africa

³Department of Life Sciences, Imperial College London, Silwood Park Campus, London, UK

⁴Comparative Plant & Fungal Biology, Royal Botanic Gardens, Kew, Surrey, TW9 3AB, UK

⁵Statistics in Ecology, Environment and Conservation, Department of Statistical Sciences, University of Cape Town, Cape Town, South Africa

⁶Department of Zoology, University of Oxford, South Parks Road, Oxford, OX1 3PS, UK

*Corresponding author; e-mail: annalie.melin@gmail.com

Melin *et al.* (2017). *Econ. Bot.* 71: 58-74

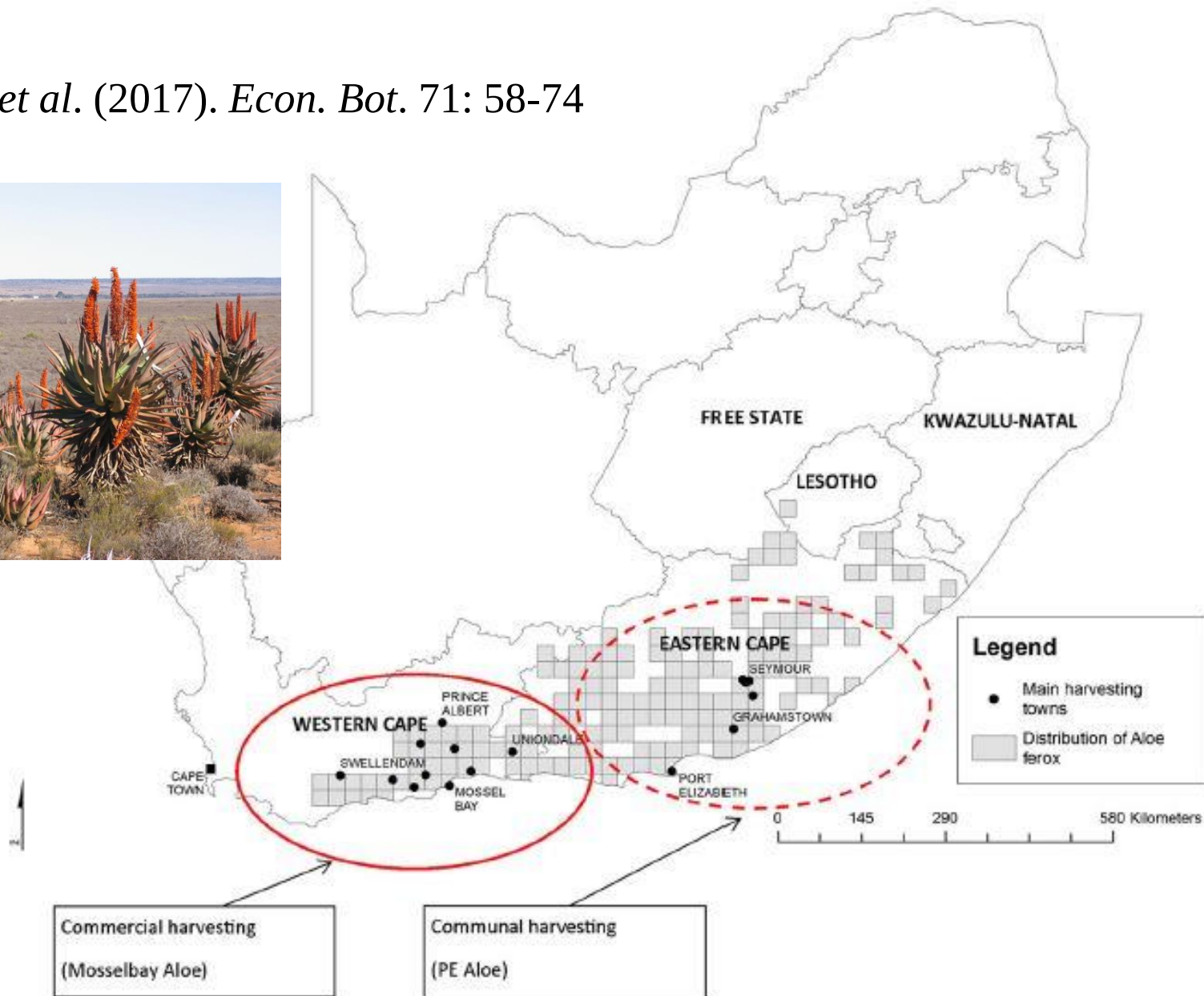
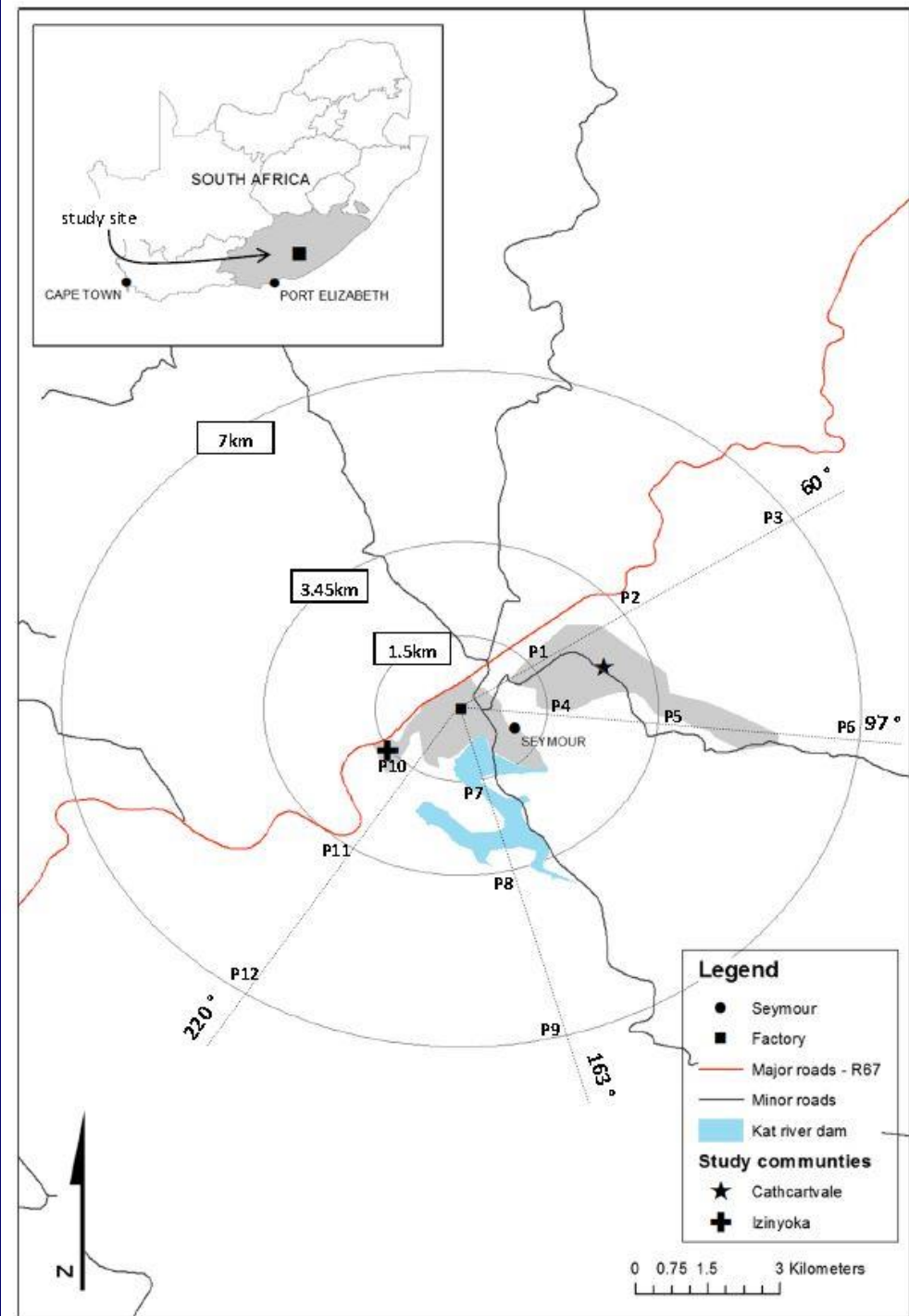


Fig.1. Map of Southern Africa showing natural distribution of *Aloe ferox*, provinces, the main harvesting areas, and study sites with annotations.

Melin *et al.* (2017).
Econ. Bot. 71: 58-74

Illustrated guidelines on
sustainable harvesting
practices and related training
were provided to
co-operative

Outcome: overharvesting:
short term profits
gained by overharvesting vs.
long term sustainability
practises





Home

- ▶ Non Detriment Findings (NDF)
- ▶ View existing reports database

Submit a report



Please log in to access

Other issues

- ▶ CITES 'Non-detriment findings'
- ▶ CITES and livelihoods
- ▶ International Consortium on Combating Wildlife Crime
- ▶ Introduction from the sea
- ▶ Wildlife trade policy reviews

Non-detriment findings



The preamble to the Convention recognizes that international cooperation is essential for the protection of certain species of wild fauna and flora against over-exploitation through international trade, and recognizes also the urgency of taking appropriate measures... [See more](#)

Current policies on NDFs

In Resolution Conf. 13.2 on *Sustainable use of biodiversity: Addis Ababa Principles and Guidelines*, Parties were urged, when adopting NDF...

[See more](#)

Guidance on NDFs

In 1992, the CoP adopted Resolution Conf. 8.6 on the *Role of the Scientific Authority* which arose initially from a document by the United States of America discussed at the fifth... [See more](#)

Convention Requirements

In detail, the NDF requirements in the text of the Convention are:

a) Article III (Appendix-I species):

i) An export permit... [See more](#)

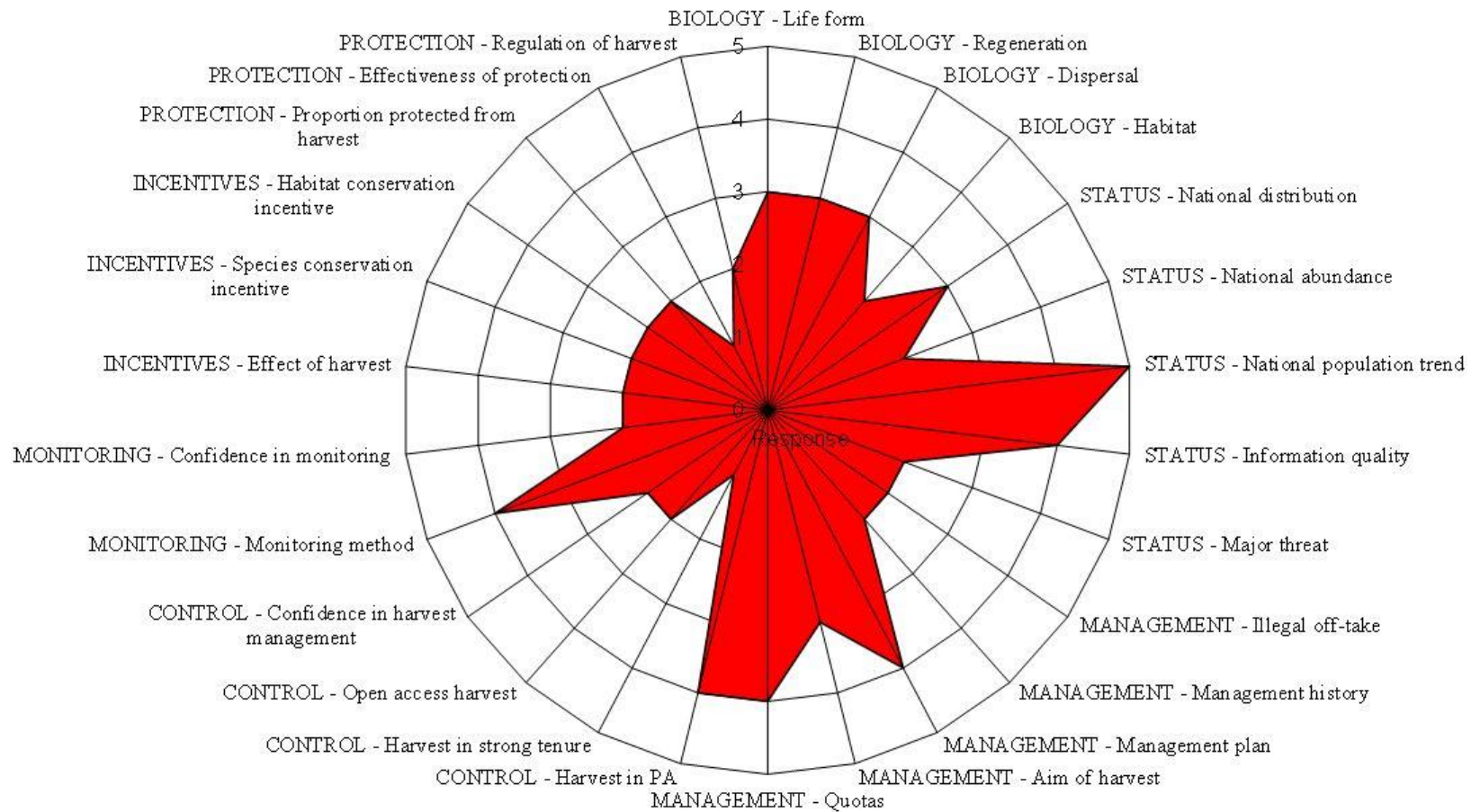


Figure 1: Radar chart summarizing the non-detriment finding assessment for *A. ferox* in accordance with the CITES NDF checklist. Explanations of scores given are detailed in Table 1. Higher scores are indicative of higher risks to the species. The area shaded in the radar chart indicates an overall low to moderate risk to the species.

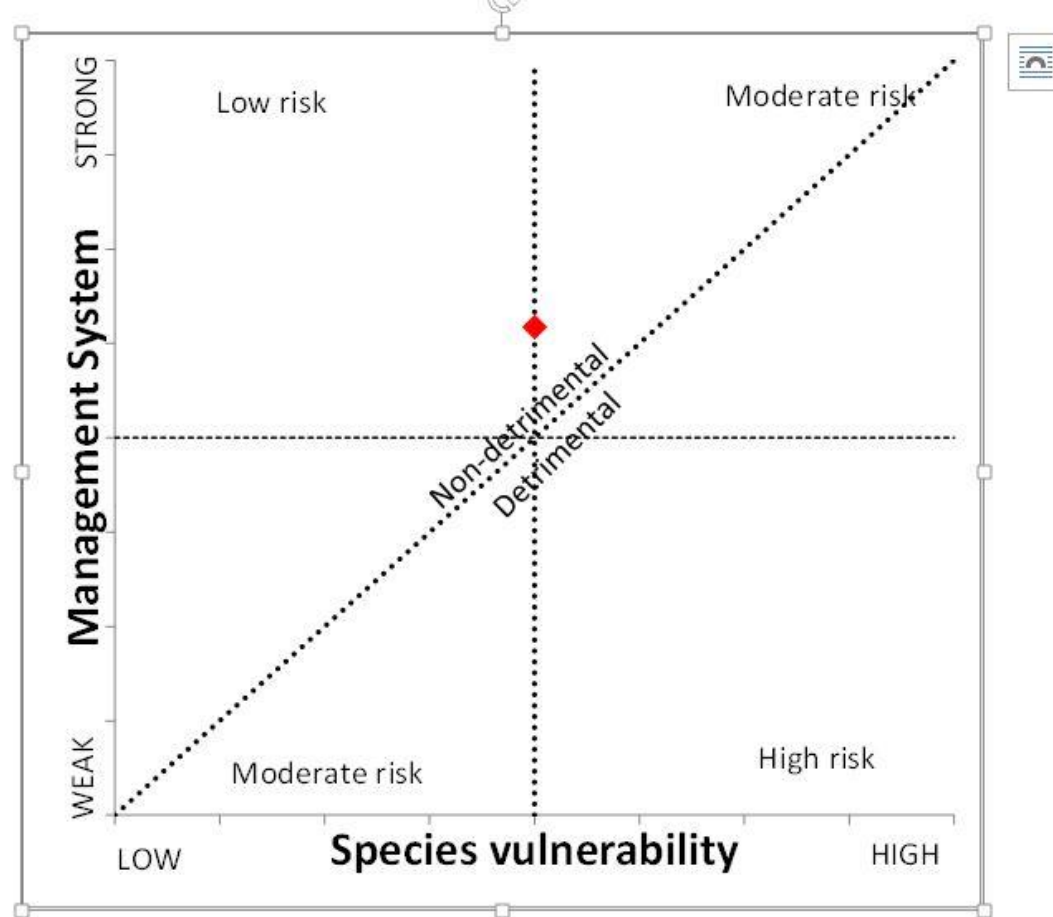


Figure 2: The risk of trading in *A. ferox*, as represented by the relationship between species vulnerability (biology and status) and the management system to which the species is subjected (management, control, monitoring, incentives and protection). The figure shows that the species is currently at a low to moderate risk and trade is non detrimental.





Using a deterministic population model to evaluate population stability and the effects of fruit harvesting and livestock on baobab (*Adansonia digitata* L.) populations in five land-use types



Sarah M. Venter^{*}, Ed. T.F. Witkowski

Restoration and Conservation Biology Research Group, School of Animal, Plant and Environmental Sciences, University of the Witwatersrand, Johannesburg PO WITS 2050, South Africa

ARTICLE INFO

Article history:

Received 12 December 2012

Received in revised form 17 February 2013

Accepted 9 April 2013

Keywords:

Baboons

Climate change

Recruitment

Rainfall

Seedling protection

Tolerance level

ABSTRACT

The subsistence and commercial use of baobab (*Adansonia digitata*) fruit is important to many thousands of marginalized people in the arid tropics of Africa, yet sustainable harvest levels have not previously been studied. Size-class distributions of baobab populations tend to be stable, suggesting high tolerance to fruit harvesting. However, environmental conditions have changed substantially over the last 100 years. Increasing livestock numbers, land modification and climate change are new threats which may affect tolerance to fruit harvesting. To investigate this, a deterministic stage-based population projection matrix model was developed using (a) long term baobab monitoring data from 2 sites, (b) radio-carbon age calculations, (c) extensive field surveys of population structure and fruit (and seed) production, and (d) experimental field trials on seed banks and seedling and sapling survival in relation to the presence of livestock. Projected population growth (λ) was then evaluated for five land-use types (nature reserves, rocky outcrops, plains, fields, and villages) under three levels of livestock (none, moderate and high stocking rates). Response to fruit harvest intensity was tested for each scenario by decreasing seed availability by 10% from 100%. High livestock numbers resulted in baobab population declines, with $\lambda < 1$ in all land-use types. Under moderate and zero livestock numbers, baobab populations in plains, rocky outcrops, villages and fields were able to tolerate between 33% and 90% fruit harvest rates. In nature reserves there was already high predation on immature fruit by baboons, another cause of population decline, with the model showing no tolerance whatsoever to fruit harvesting. These results show that fruit harvesting can be sustainable in production landscapes under moderate livestock levels. However the future is uncertain, as a predicted lowering of rainfall due to climate change is a further concern, with likely negative impacts on fruit yields and recruitment and consequently population projections. Thus active planting and protection of seedlings should take place to mitigate current and future negative impacts facing baobab populations.

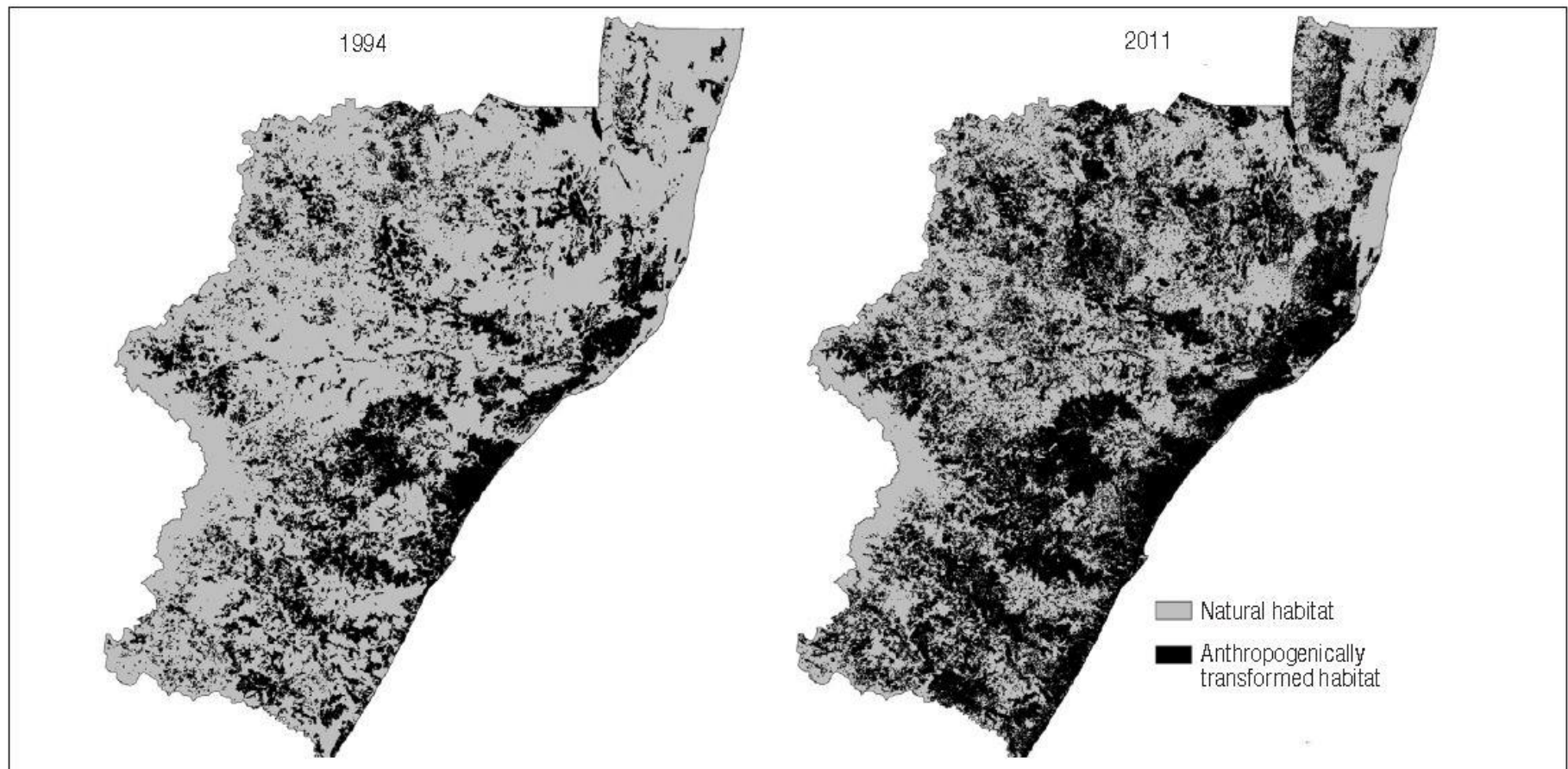


Figure 5: Accumulated transformation in KwaZulu-Natal from 1994 to 2011. The black areas represent anthropogenically transformed areas whilst the grey areas represent natural habitat.

Rapid land-cover change and habitat loss

From Jewitt *et al.* (2015);

S Afr J Sci. 2015;111(9/10), Art. #2015-0019, 9 pages. <http://dx.doi.org/10.17159/sajs.2015/20150019>

FairWild Standard

Version 2.0

Approved by the FairWild Board on 26th August 2010

Unifies the International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP) Version 1.0, 2007 and the FairWild Standards Version 1, 2006



The FairWild Standard:
Version 2.0 has 11
Principles and 29 Criteria
addressing ecological,
social and economic
requirements for
sustainable wild
collection.



DE CASTRO & BRITS
ECOLOGICAL CONSULTANTS

Field survey of the distribution of *Pelargonium sidoides* DC and
size of selected sub-populations



Authors: A. de Castro, J. Vick and W. Mollélan

Date: 10-08-2010



DE CASTRO & BRITS
ECOLOGICAL CONSULTANTS

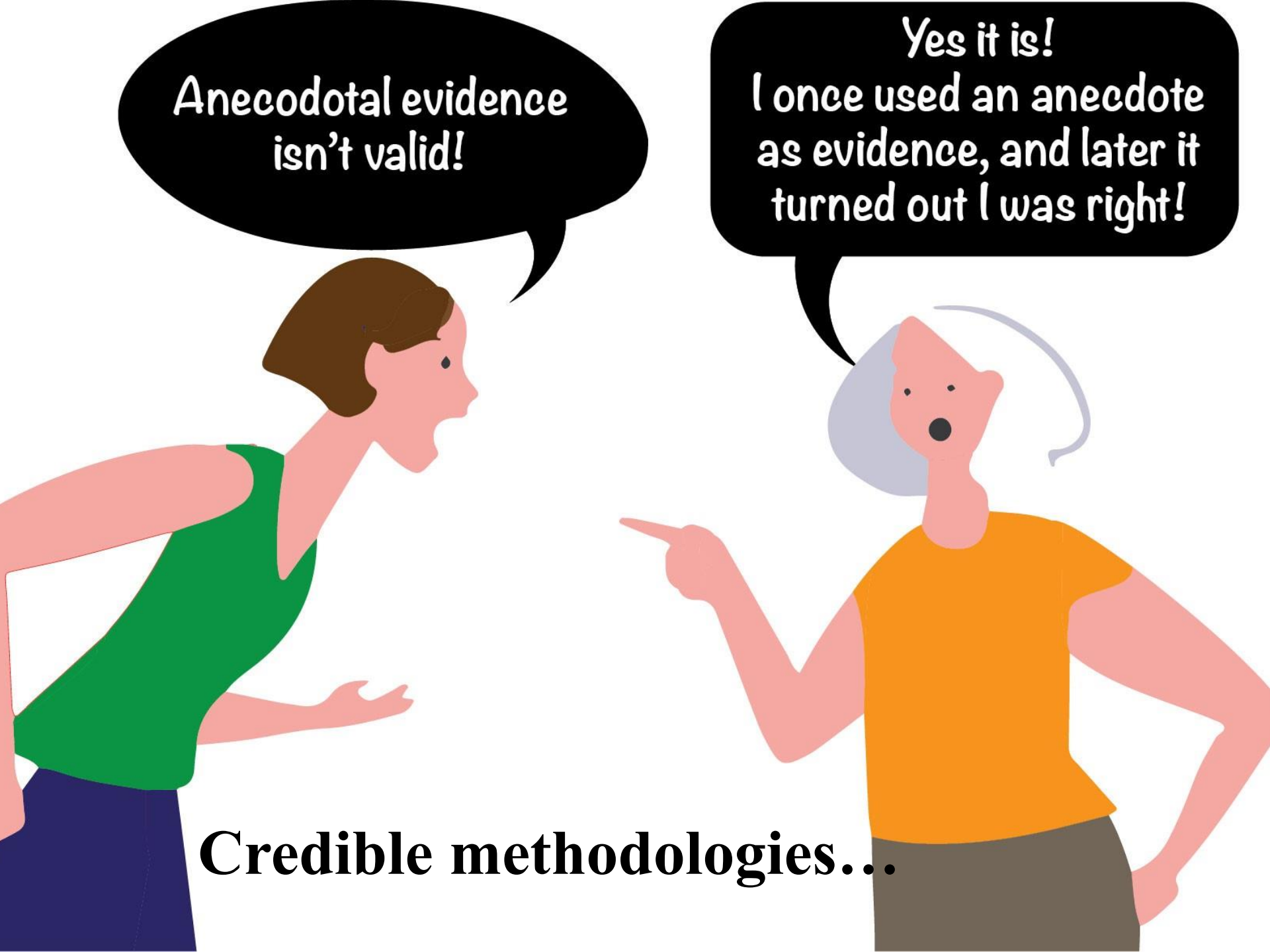
Second field survey of selected sub-populations of
Pelargonium sidoides DC in the Free State and Eastern Cape



Author: A. de Castro

Date: 2nd September 2018

Status: Draft

An illustration of two stylized human figures. On the left, a person with short brown hair, wearing a green sleeveless top and a dark blue skirt, is shown in profile, leaning forward with an open mouth as if speaking. On the right, a person with short grey hair, wearing an orange t-shirt and a grey skirt, is shown from the waist up, pointing their right index finger towards the first person. Both characters have large, expressive eyes. Two large black speech bubbles are positioned above them. The first speech bubble, coming from the person on the left, contains the text 'Anecdotal evidence isn't valid!'. The second speech bubble, coming from the person on the right, contains the text 'Yes it is! I once used an anecdote as evidence, and later it turned out I was right!'. At the bottom center of the image, the text 'Credible methodologies...' is written in a bold, black, serif font.

Anecdotal evidence
isn't valid!

Yes it is!
I once used an anecdote
as evidence, and later it
turned out I was right!

Credible methodologies...

Resource Assessments and Monitoring and Evaluation

- **Tools...good science: provide defensible evidence**
- **Means to an end: informed resource management**
- **Maintain ecological integrity**
- **Sustainable value chain / business development**

