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Grassroots

Newsletter of the Grassland Society of Southern Africa

2023: A watershed year for climate litigation

Karoo plant of the month
Wahlenbergia nodosa

New discoveries: 500-year-old medicine container

A globally invasive plant species

Advancing Rangeland Ecology and Pasture Management in Southern Africa

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From our NEW editor

Dear reader,

I hope you have had a great start to 2023. Some of you may have seen in the last Newsletter that Malissa has signed off, I have taken up the position as the new editor and am ready to pick up where she left off. I have been part of the GSSA since 2021, when I started my MSc. My research focused on dryland grain systems in the Swartland, and how rotating grains with cover crops, or livestock-pastures impacted the greenhouse gas emissions. I worked specifically with measuring methane and nitrous oxide soil emissions, and changes in soil carbon stocks. As you can tell by the range of articles in this newsletter, my interests lie in diversified farming systems, agroecology, and climate change & just transition.

With the ClientEarth vs. Shell case, and many other recent litigations over climate change impacts listed in 'Why 2023 will be a watershed year for climate litigation', we have reached a point where vague, greenwashed "net zero plans" no longer suffice. Now is a critical time for us: limiting warming to 1.5°C implies that global greenhouse gas emissions peak in the next two years and then reduce by 43% by 2030. It's reassuring to see global climate action in place. And I thought it would be encouraging for all our ecologists, conservationists, botanists, and other scientists, that are working in systems currently disrupted by climate change impacts.

The main theme of this issue is the interaction between people and nature; our ancient dependency, combined with our current impact. For instance, 'Ensuring equitable biodiversity conservation' discusses the problem with "fortress conservation" and removing local people from land and resources they depend on. 'Parks vs. people' talks about the challenge of balancing socio-economic needs with conservation through green infrastructure planning. Highlighting the juxtaposition of context, we have a webinar on our natural and cultural heritage, an abstract on the recent discovery of a 500-year-old medicine container containing plant-based medicinal compounds, and an interview on illegal harvesting for medicinal purposes.

I would like to take this opportunity to remind everyone that your interaction with our newsletter is valued and welcomed. I encourage you to join in the process and let us know what you like, tell us about your research, and send us news - we look forward to featuring more articles written by our readers. We are here to facilitate knowledge sharing and meaningful connections. Do you have a position opening up on a project for a student or young researcher? Know of an exciting event? Let us know.

Lastly, abstract submissions are open until the 5th of May for our Congress 58 which will be held in Omaramba, Rustenburg, North West Province 24 – 28 July.

Till next time,

Lisa

Contact us

If you have any feedback, comments, or suggestions, feel free to contact us at:
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TREE OF THE MONTH

Vachellia hebaclada sups. hebeclada

Candle Thorn, Trassiebos

RSA Tree No. 170

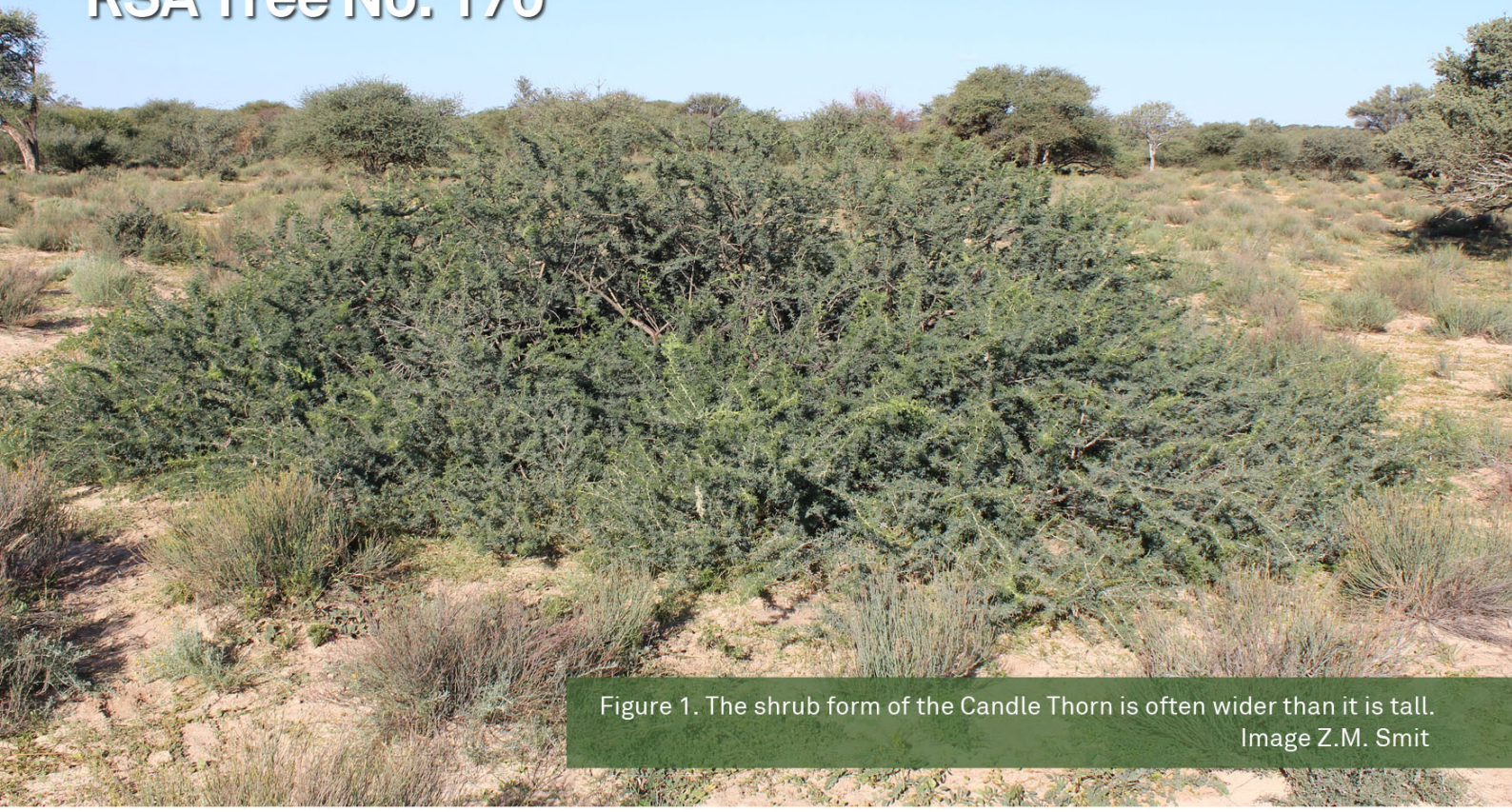

Figure 1. The shrub form of the Candle Thorn is often wider than it is tall. Image Z.M. Smit

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Northern Cape Department of Agriculture, Environmental affairs, Land reform and Rural development

The Candle Thorn can grow either as a single stemmed tree or as a horizontal, spreading, multi-stemmed shrub with dense branches near the ground. As a shrub it typically grows 1 to 2 m high but several meters wide, while as a small tree it can reach up to 8 m. The spreading shrub form is generally found in dry savanna and grassland areas while the upright form generally grows in moister soils with a high clay content. Only the subspecies *hebeclada* occurs in South Africa and can be found in the Northern Cape, Mpumalanga, Gauteng, Free State, North West, and Limpopo. The name "hebeclada" means hairy branches, a reference to the hairs covering young branches of the Candle Thorn.

Diagnostic features

- Characteristic prostrate growth form (Figure 1)
- The large, fairly straight pods are very distinctive and stand upright (Figure 2)
- The paired spines are straight with sharp, recurved tips (Figure 3)
- New branches are green and hairy and may arise directly from the soil leaves are bipinnate with small paired leaflets

The flowers of *Vachellia hebeclada* attract many small insects like bees, beetles and flies. A number of animals have been recorded eating the pods of the Candle Thorn. The leaves are however reported to be poisonous due to the presence of prussic acid. The shrub form also provides shelter against predators for many mammal and bird species. This tree is reported to be the host of the southern African desert truffle (*Kalaharituber pfeilii*)

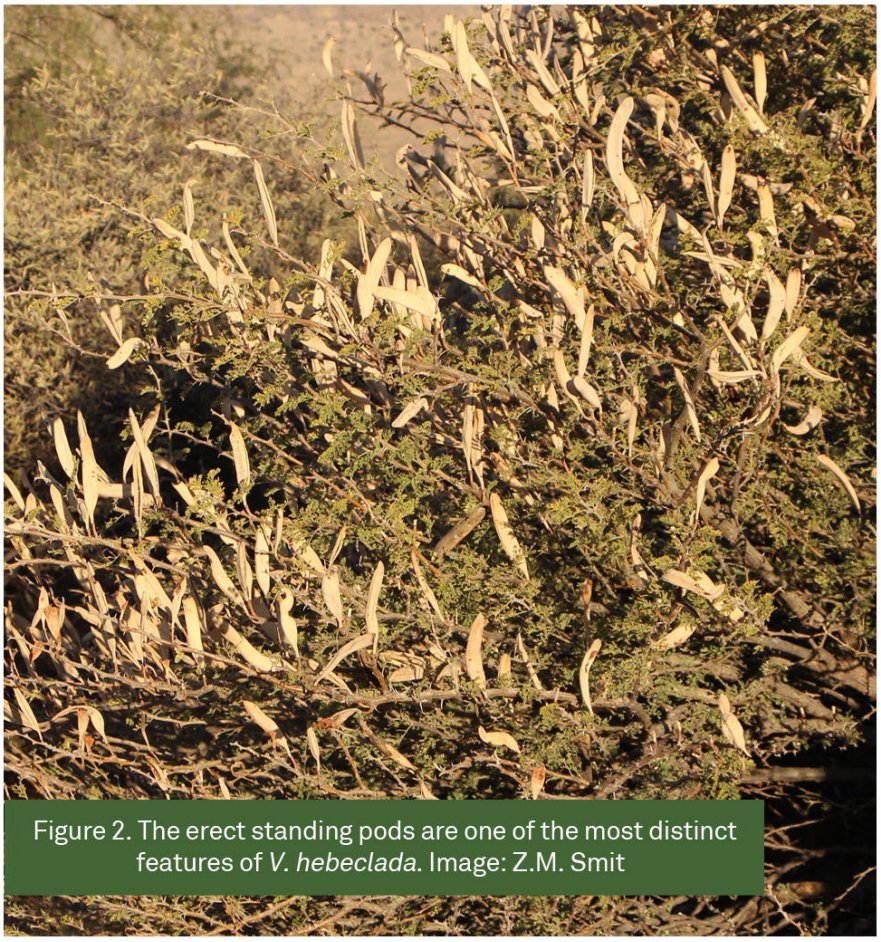

Figure 2. The erect standing pods are one of the most distinct features of *V. hebeclada*. Image: Z.M. Smit

Figure 3. The tips of the paired spines are curved and very sharp. Image: https://candide.com/ZA/plants/a114824b-a458-47ba-8cb6-92b4c12e3427

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KAROO PLANT OF THE MONTH

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Wahlenbergia nodosa
Muistepelkaroo

Figure 2. Muistepelkaroo flowers are cream to white with 5 petals

Figure 1. Typical habitat of Muistepelkaroo on a rocky hillside

Muistepelkaroo is a small to medium sized shrub, usually about 30 cm tall, but growing up to 60 cm under good conditions. Muistepelkaroo is quite wide spread and can be found from the Cape Peninsula to the north of the Freestate. Muistepelkaroo can be found in a variety of habitats and soil types, but is often found on stony hillsides or rocky outcrops. The name Muistepelkaroo is in reference to the shape of the flower bud and fruit.

Diagnostic Features

- The leaves are very small, about 5 mm long and 3 mm wide and strongly curved backwards toward the branch.
- Older leaves are dropped and only tiny new leaves are kept during drought.
- The tiny flower buds are and fruitlets are coppery brown.
- The small, star shaped flowers are cream to white and are borne from spring to autumn.
- Muistepelkaroo grows upright with new shoots reddish-brown before turning light grey with age.
- These shrubs generally have rigid, hard and tough foliage.

Ecological value

Muistepelkaroo only is moderately palatable, however, it is a valuable fodder plant, especially in previously overgrazed rangelands where more palatable species have become rarer or absent. It seems that this species is more readily utilised in the south of its distribution, and some specimens may be found well-browsed, while adjacent plants are ignored. The presence of large numbers of Muistepelkaroo may indicate rangelands in moderate to good condition, especially if more palatable species are also present.

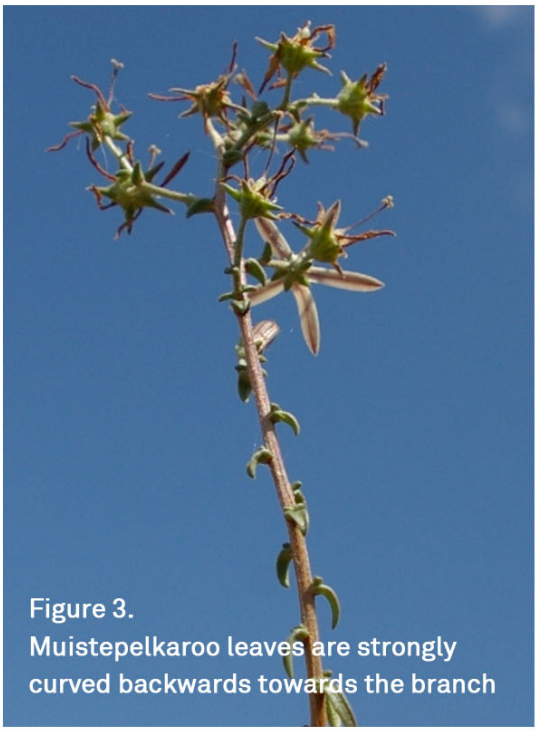

Figure 3.
Muistepelkaroo leaves are strongly curved backwards towards the branch

Figure 4. A large Muistepelkaroo shrub in flower

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Why 2023 will be a watershed year for climate litigation

Isabella Kaminski

Reprinted from: http://bit.ly/409zpmQ

Over the past twelve months, courts from Indonesia to Australia have made ground-breaking rulings that blocked polluting power plants and denounced the human rights violations of the climate crisis. But this year could be even more important, with hearings and judgments across the world poised to throw light on the worst perpetrators, give victims a voice and force recalcitrant governments and companies into action.

Although the bulk of climate lawsuits have been filed in the US, most of these have been thrown out of court or bogged down in procedural arguments. This year will, however, finally see a case go to trial when a group of children and young people between the ages of five and 21 square off against Montana.

Over two weeks in June, they will argue that the US state is failing to protect their constitutional rights, including the right to a healthy and clean environment, by supporting an energy system driven by fossil fuels. They will also say climate change is degrading vital resources such as rivers, lakes, fish and wildlife which are held in trust for the public.

"Never before has a climate change trial of this magnitude happened," says Andrea Rodgers, senior litigation attorney with Our Children's Trust, which is behind the case. "The court will be deciding the constitutionality of an energy policy that promotes fossil fuels, as well as a state law that allows agencies to ignore the impacts of climate change in their decision making."

She said the watershed trial would be watched around the world and "is set to influence the trajectory of climate change litigation going forward".

Other cases against US states could also be given permission to go to trial.

To the north in Canada, a ruling is expected this year in the country's first climate lawsuit to have had its day in court. Seven young people, fronted by now-15-year-old Sophia Mathur, made history last autumn when they challenged the Ontario government's rollback of its 2030 greenhouse gas emissions reduction target.

And to the south in Mexico, Greenpeace and groups of young people have led several important court cases challenging the slow pace of the country's clean energy transition. In one, the Supreme Court is due to decide whether they have standing to bring their case.

In the rest of Latin America, which has pioneered innovative approaches in climate litigation, legal action will increase and improve next year, says Javier Davalos González, senior lawyer at the Inter-american Association for Environmental Defense (AIDA).

South Africa - already a hotspot for climate litigation within the African continent - could see a whole new set of lawsuits filed this year, as well as decisions in several important cases. One, a constitutional challenge to the country's plan to build new coal-fired power stations during the climate crisis, was heard in November and a ruling is expected soon.

There are also hopes that Uganda's High Court might finally conclude a case filed more than a decade ago by a group of young people, who argue their government is failing to preserve a healthy atmosphere as a public resource for both present and future generations.

Meanwhile, the Australian crucible of successful climate litigation will hear a class action case in June led by Torres Strait islanders Pabai Pabai and Paul Kabai, who argue the state should cut its emissions by 74% by 2030 to save their islands from rising sea levels and other devastating climate impacts.

Figure 1. The next twelve months could be a decisive time for climate change in the courts (credit: Backbone Campaign)

A hop away in New Zealand, the Court of Appeal is expected to hear Northland iwi leader Mike Smith's appeal against the High Court striking down his claim against the New Zealand government, in which he sought a declaration that it had breached its climate obligations.

And a decision is expected soon in a case filed by a youth group claiming the government of South Korea's inaction on climate change infringes their constitutional rights.

Chinese courts, a surprisingly welcome venue for environmental lawsuits, have shown a growing appetite for climate litigation and action could be taken this year against provincial governments or cities.

On the other side of the world, the European Court of Human Rights has several climate cases on its books, all of which argue that government inaction in limiting dangerous global warming risks basic human rights such as health and life.

At its first public climate hearing in March this year, a group of older Swiss women known as the KlimaSeniorinnen Schweiz will say they are particularly vulnerable to climate change because their health is at risk from heat waves. They will get to make their arguments in front of the court's Grand Chamber, which is reserved for the most serious cases, and will do so supported by two prominent British lawyers - Jessica Simor and Marc Willers.

Although this is a European case, it will cause international ripples. Kelly Matheson, deputy director of global climate litigation of Our Children's Trust, which is advising on climate science in three cases before the court, said the decision by the court's 17 judges would have a "profound effect on courts throughout the world as their finding will inform and influence the decision made in other judicial processes".

At national level, campaigners will be asking judges to make climate orders against the governments of Italy, Belgium and France, following a string of successful similar European cases.

Sarah Mead, co-director of the Climate Litigation Network, says these cases are crucial because a positive outcome can enhance government accountability, particularly in OECD countries with significant historical responsibilities and more capacity to cut their emissions. They also help "narrow the global emissions gap and further foster citizens' mobilisation on the need for stronger climate action".

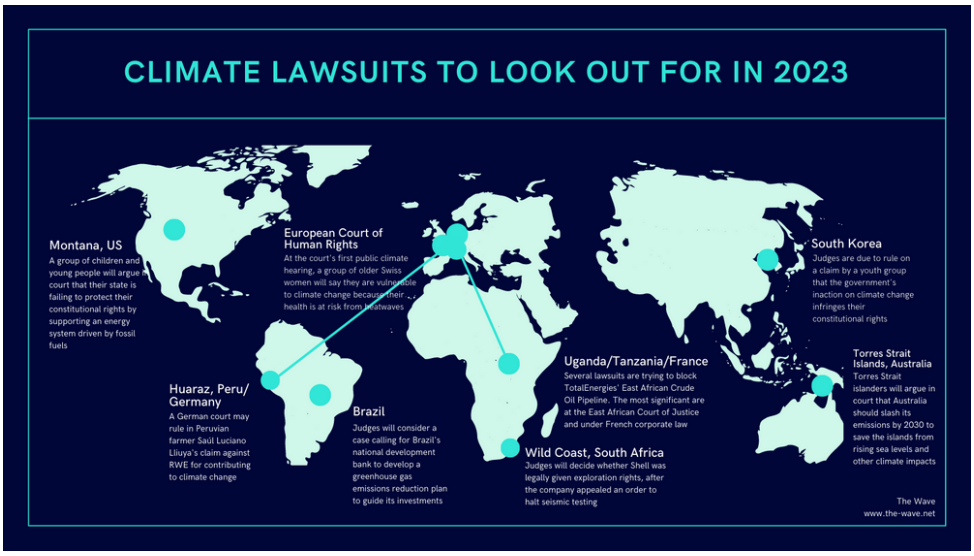

Figure 2. Climate lawsuits to look out for in 2023

She adds that the Climate Trials campaign, launched last year to threaten governments with legal action if they did not act, will ramp up.

There will be movement on an international level too. Early this year, the UN will vote on a key resolution about human rights and climate change. If passed, the International Court of Justice will have to provide an advisory opinion on the obligations of states under international law to protect the rights of present and future generations against the adverse effects of climate change. This work has been led by vulnerable island state Vanuatu, and now has support from governments all around the world.

Private sector

It's not just governments in the firing line; climate litigation against the private sector will continue to grow.

In the US, there might finally be an answer to the question of which courts will handle the plethora of lawsuits against the fossil fuel industry. Companies have been pushing to have these cases heard at the federal level, where they believe they stand more chance of success, but judges have consistently ruled against them.

The Supreme Court has been asked to intervene, and if it takes up the case next year it may finally draw a line under the issue.

Richard Wiles, president of the Center for Climate Integrity, says that if the Supreme Court agrees with federal judges it would remove one of the last procedural hurdles and mean cases can start to move on to talk about the actual issues at stake - were the actions of fossil fuel companies reasonable and what responsibility do they bear?

Following pre-Christmas wins against billionaire Clive Palmer's attempt to build a huge thermal coal mine and Santos $4.7 billion Barossa offshore gas project, Australian climate campaigners are now on tenterhooks awaiting a decision on their challenge to Woodside's $16bn Scarborough gas project because of the impact of its greenhouse gas emissions on the Great Barrier Reef.

And, in another case fronted by Northland iwi leader Smith, New Zealand's Supreme Court will decide whether a challenge against seven of the country's largest polluters and fossil fuel producers, claiming injury from their ongoing emissions, can go to trial.

Over in Germany, there is likely to be a ruling in a landmark lawsuit brought by Peruvian farmer Saúl Luciano Lliuya against RWE for contributing to climate change. The court sent judges to Peru last year to determine the level of damage, and its decision will be very closely watched by corporations of all stripes.

Germany is also home to a group of cases filed against car manufacturers. One claim against Mercedes-Benz was rejected last year, but others could proceed further.

Following a landmark ruling last year that recognised the Paris Agreement as a human rights treaty, Brazil's courts are expected to rule on a case brought against Brazil's national development bank (BNDES) and its investment arm BNDESPar by Brazilian NGO Conectas Direitos Humanos which wants them to develop a greenhouse gas emissions reduction plan to guide their investments. It's the first case of its kind against a development bank anywhere in the world, and could have significant

repercussions on wider climate finance.

Several lawsuits have been filed to try to block TotalEnergies' controversial East African Crude Oil Pipeline (EACOP). One brought by civil society organisations from Uganda and Tanzania at the East African Court of Justice has been bogged down by jurisdictional arguments. But another filed under a novel 'duty of vigilance' law in France had a hearing in December and there could potentially be a ruling this year.

And in South Africa, the courts will decide whether Shell was legally given exploration rights off the ecologically sensitive Wild Coast, after Shell appealed an order to halt seismic testing.

Next year might also see movement in Shell's appeal against a landmark ruling by a Dutch court, which in 2021 ordered it to cut its carbon emissions by 45% by 2030. Although the court was clear that Shell must begin complying with the ruling straight away, Milieudefensie (the Dutch arm of Friends of the Earth), which brought the case, does not think it is doing enough to meet the target. In the meantime, Shell has moved its headquarters from the Netherlands to the UK.

Shell's directors too will be under an unprecedented level of scrutiny this year. ClientEarth sent a letter to the company's board in 2022, warning that it was prepared to start a legal challenge in the UK if Shell does not handle its climate risks better.

If ClientEarth follows through, this would be the first derivative action anywhere against a board for failing to consider efforts towards achieving net zero.

When it comes to greenwashing - a fast-growing area of climate litigation - expect to hear more on allegations that Dutch airline KLM's adverts promoting the company's sustainability initiative are misleading and claims that gas company Santos breached Australian corporate and consumer law over clean energy and net zero plans.

Whatever happens in those cases, expect to see many more lawsuits filed this year, as well as more creative uses of the law. These will be filed against governments of all levels, based on the most cutting-edge science, as well as against companies.

The financial sector, in particular, is likely to be a big target, and there will be continuing waves of related litigation targeting plastics and biodiversity loss. This year is "shaping up to be a really important year for climate litigation," says Mead.

Figure 3. A a group of older Swiss women will tell the European Court of Human Rights they are particularly vulnerable to climate change because their health is at risk from heat waves (credit: KlimaSeniorinnen)

Shell's board of directors sued over climate strategy in a first-of-its-kind lawsuit

- ***Environmental law firm ClientEarth, in its capacity as a shareholder, filed the lawsuit against the British oil major's board at the high court of England and Wales on Thursday.***
- ***It alleges 11 members of Shell's board are mismanaging climate risk, breaching company law by failing to implement an energy transition strategy that aligns with the landmark 2015 Paris Agreement.***
- ***"We do not accept ClientEarth's allegations," a Shell spokesperson said.***

Sam Meredith

Reprinted from: http://bit.ly/3loueAC

Shell's directors are being personally sued for allegedly failing to adequately manage the risks associated with the climate emergency in a first-of-its-kind lawsuit that could have widespread implications for how other companies plan to cut emissions.

Environmental law firm ClientEarth, in its capacity as a shareholder, filed the lawsuit against the British oil major's board at the high court of England and Wales on Thursday. It alleges 11 members of Shell's board are mismanaging climate risk, breaching company law by failing to implement an energy transition strategy that aligns with the landmark 2015 Paris Agreement.

The claim, which has the backing of institutional investors with over 12 million shares in the company, is said to be the first case in the world seeking to hold a board of directors liable for failure to properly prepare for the energy transition.

"Shell may be making record profits now due to the turmoil of the global energy market, but the writing is on the wall for fossil fuels long term," Paul Benson, senior lawyer at ClientEarth, said in a statement.

"The shift to a low-carbon economy is not just inevitable, it's already happening. Yet the Board is persisting with a transition strategy that is fundamentally flawed, leaving the company seriously exposed to the risks that climate change poses to Shell's future success — despite the Board's legal duty to manage those risks," Benson said.

"We hope the whole energy industry sits up and take notice". - Mark Fawcett (Chief Investment Officer at Nest)

The group of investors supporting the claim include U.K. pension funds Nest

Figure 1. Shell recently reported its highest-ever annual profit of nearly $40 billion.

and London CIV, Swedish national pension fund AP3, French asset manager Sanso IS and Danske Bank Asset Management, among others. Altogether, the institutional investors hold more than half a trillion U.S. dollars in total assets under management.

"We do not accept ClientEarth's allegations," a Shell spokesperson said. "Our directors have complied with their legal duties and have, at all times, acted in the best interests of the company."

"ClientEarth's attempt, by means of a derivative claim, to overturn the board's policy as approved by our shareholders has no merit. We will oppose their application to obtain the court's permission to pursue this claim," they added.

Shell, which is aiming to become a net-zero emissions business by 2050, said it believes its climate targets are Paris-aligned.

ClientEarth said leading third-party assessments have suggested this is not the case, however, noting Shell's strategy excludes short to medium-term targets to cut the emissions from the products it sells, known as Scope 3 emissions, despite this accounting for over 90% of the firm's overall emissions.

The aspirational goal of the Paris Agreement is to pursue efforts to limit global heating to 1.5 degrees Celsius above pre-industrial levels by slashing greenhouse gas emissions. The fight to keep global heating under 1.5 degrees Celsius is widely regarded as critically important because so-called tipping points become more likely beyond this level. These are thresholds at which small changes can lead to dramatic shifts in the Earth's entire support system.

To be sure, the burning of fossil fuels, such as oil and gas, is the chief driver of the climate emergency.

Big Oil profit bonanza

The case comes shortly after Shell reported its highest-ever annual profit of nearly $40 billion.

The energy giant's 2022 earnings smashed its previous annual profit record of $28.4 billion in 2008 and were more than double the firm's full-year 2021 profit of $19.3 billion.

Shell CEO Wael Sawan described 2022 as a "huge year" for the company, saying he felt privileged to be stepping into the role he started on Jan. 1.

"As we look ahead, I think we have a unique opportunity to be able to succeed as the winner in the energy transition. We have a portfolio that I think is second to none," Sawan said.

Shell's results came as part of a Big Oil profit bonanza last year, bolstered by soaring fossil fuel prices and robust demand since Russia's full-scale invasion of Ukraine.

Nest Chief Investment Officer Mark Fawcett said the case against Shell's board of directors showed investors were prepared to challenge those who aren't deemed to be doing enough to transition their business.

"We hope the whole energy industry sits up and takes notice," Fawcett said.

Separately, London CIV's Head of Responsible Investment Jacqueline Amy Jackson said, "In our view, a Board of Directors of a high-emitting company has a fiduciary duty to manage climate risk, and in so doing, consider the impacts of its decisions on climate change, and to reduce its contribution to it."

"We consider that ClientEarth's claim is in our client funds' interests as a shareholder of Shell, and we support it," Jackson added.

Figure 2. Activists from Greenpeace set up a mock-petrol station price board displaying the Shell's net profit for 2022 as they demonstrate outside the company's headquarters in London on Feb. 2, 2023. (Daniel Leal | Afp | Getty Images)

Ensuring equitable biodiversity conservation

PASTRES

Reprinted from: https://bit.ly/3ZUCTcU

World leaders have been engaged in drafting a new Global Diversity Framework (GDF) for protecting the world's biodiversity at COP15, the UN's Biodiversity Conference. Now as the conference enters its final days, what outcomes do we expect for pastoralists across the world?

The draft GDF includes 21 targets to halt and reverse biodiversity loss by 2030. At the centre of attention is the 30 X 30 target which seeks to designate 30% of Earth's land and ocean area as 'protected areas' by 2030. 30% is considered the critical threshold to avoid the risk of extinction and to ensure global economic and food security. Many indigenous communities and their advocates fear that this provision will harm the interests of those who have long served as custodians of critical habitats.

Designating a region as a 'protected area' will mean that pastoralists, and other resource users, will not be permitted to inhabit those areas or practice livestock keeping, foraging and agriculture. This will have serious consequences for the local and indigenous communities that have served as guardians while the global elite will be able to access these areas for tourism and hunting, and in some cases, for resource exploitation. These provisions also mean that communities, who rightfully belong in these areas, are made subservient to the state and must prove their positive contributions to nature. Now, as private finance is being solicited to support conservation initiatives, the vulnerability of local populations is further heightened. Several indigenous groups have been protesting this provision both outside and within the floor of the COP15.

Pastoralists have been at the firing line of such initiatives for long. The last blog has spoken about how pastoralists areas have been vulnerable to 'fortress conservation.' The conservation areas under the Northern Rangelands Trust in Kenya are examples of the overlap between pastoral areas and protected areas where pastoral livelihood practices have been undermined.

In western India, the Banni grassland has been designated as a 'protected forest' yet the Working Plan prepared by the State Forest Department seeks to exploit a part of the area for the production of charcoal and biofuels.

The PASTRES biodiversity briefings have shed light on some of these issues to support nuanced decision-making. Pastoralists live on and use over half of the Earth's land surface. The managed grazing of livestock by pastoralists is useful in controlling forest fires. Pastoralism improves biodiversity by facilitating seed dispersal and protecting rare species. It improves soil microbial health and fertility as well.

Announcing $800 million in funding over the next 7 years for indigenous-led conservation initiatives, Justin Trudeau, Prime Minister of Canada, the host country of COP15, set the tone for the meeting in his opening speech when he said, "All of our work in protecting nature must be reflective of indigenous ways of knowing and being, and in true partnership in order to advance our shared journey of reconciliation."

Recognising that species and ecosystems are protected through human interaction, and that they are an integral part of ecosystems, is crucial as negotiations move forward. So far, local and indigenous people are included in the GBF in terms of consultation and participation. A greater focus on their rights will not only ensure that we are able to tackle the twin challenges of climate change and nature loss, but that it is also done equitably.

More on this topic

Read the set of 6 briefings that discuss different aspects of human-animal-environment relations.

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Climate change: Africa has a major new carbon market initiative - what you need to know

Jonathan Colmer

Current Address: University of Virginia
Reprinted from: http://bit.ly/3LxquXW

Climate finance for the African continent got a boost at the 2022 United Nations Climate Conference (COP27), with the launch of the African Carbon Markets Initiative. This aims to make climate finance available for African countries, expand access to clean energy, and drive sustainable economic development.

Led by a 13-member steering committee of African leaders, chief executives and industry specialists, the initiative promises to expand the continent's participation in voluntary carbon markets.

Carbon markets are trading platforms which allow individuals, firms and governments to fund projects that reduce emissions (instead of reducing their own emissions).

Kenya, Malawi, Gabon, Nigeria and Togo have already indicated their intention to collaborate with the market.

Climate projects include reforestation and forest conservation, investments in renewable energy, carbon-storing agricultural practices and direct air capture. In return for funding projects like these, investors receive carbon credits – certificates used to "offset" the emissions that they continue to produce.

The African initiative's goal is to produce 300 million new carbon credits annually by 2030, comparable to the number of credits issued globally in voluntary carbon offset markets in 2021.

However, there is considerable scepticism (see 'Why carbon offsetting doesn't cut it') about whether carbon offset credits do mitigate climate change.

Two important issues

In assessing the effectiveness of carbon credits, one important concern is the concept of "additionality". Emission reductions or removals are "additional" if the project or activity would not have happened without the added incentive provided by the carbon credits. For example, if a landowner is paid to not cut down trees, but had no plans to cut them down in the first place, the project does not deliver additional emissions savings. The landowner is paid for doing nothing and the buyer's emissions are not offset.

Providing carbon credits to projects that would have been implemented anyway delivers zero climate mitigation, and can result global emissions that are higher than if the credits hadn't been issued (see 'Do carbon offsets offset carbon?'). This is a serious challenge for carbon offset markets because additionality is not measurable, despite industry claims. While project managers may claim that they are unable to proceed without funding, there is no way of knowing whether these claims are true.

A second issue is permanence. Carbon offsets have to be permanent because carbon emissions remain in the atmosphere for hundreds of years. It is almost impossible to guarantee that emissions will be offset for this length of time. But it depends on the type of offset project.

There are two types of carbon offset project:

- those that reduce the amount of carbon that is emitted
- those that remove carbon from the atmosphere.

In the case of carbon reduction projects, overall emissions remain positive. Examples of carbon reduction credits include investments in renewable energy. Even though the supplier of the carbon credit is not generating any emissions, the buyer continues to emit, and so the overall level of emissions is positive. Carbon neutrality – net-zero emissions – cannot be achieved using carbon reduction credits.

There should be more funding available for carbon reduction activities in Africa, but investors should not receive carbon credits to offset their own emissions when supporting these activities. Such investments would be philanthropic – for the good of the planet, not to balance the carbon accounting books.

Carbon removal projects do, however, have the potential to deliver a permanent net-zero emissions outcome. Direct air capture projects, which use chemical reactions to extract carbon dioxide from the atmosphere and store them deep underground, can

meet this goal. The cost of direct air capture, however, remains very high.

Forest growth, a less costly type of carbon removal project, is less permanent. Landowners may commit not to cut down trees, but wildfires, disease, and other disruption events can release much of the stored carbon back into the atmosphere.

There is still value to forest carbon credits, but they can't guarantee permanence. Forest projects provide "carbon deferrals". Additional forest growth projects remove carbon from the atmosphere for a fixed amount of time. There is value to this delay because it can reduce peak warming and gives society more time for the costs of decarbonising technologies to fall. While there is value to these carbon deferral projects they should not be used to generate carbon credits that are used to permanently offset the emissions produced through economic activity.

Goals of the market

The African Carbon Markets Initiative has bold ambitions. It will attract investments in Africa by firms, consumers and governments in countries that have historically contributed the most to climate change. Whether these investments result in any meaningful climate benefit, however, is unclear. Time will tell.

Existing carbon offset projects lack credibility. This doesn't mean that carbon credits can't be more useful in future.

Being transparent about what projects actually deliver, rather than what we hope they deliver, is paramount. Given the limited resources available to mitigate climate change, we need more than good intentions.

Figure 1. Activists press for climate change financing during COP27. Mohamed Abdel Hamid/Anadolu Agency via Getty Images

Parks versus people? Challenges facing the South African capital's greening efforts

Titilope Funmbi Onaolapo[1], Christina Breed[1], Kristine Engemann Jensen[2] and Maya Pasgaard[2]

Current Address: [1]University of Pretoria, [2]Aarhus University
Reprinted from: http://bit.ly/3TrVHOm

Urban green spaces have recently been getting more research attention because of the benefits they offer.

Gardens, parks, reserves and trees have been linked to cultural, spiritual and alternative medical solutions. Natural or semi-natural land areas can also deliver ecosystem services like food, storm water management and climate control. Cities can plan and manage these for maximum benefit.

Our research team works on the Integrative Green Infrastructure Planning project, a collaboration between the University of Pretoria in South Africa and Aarhus University in Denmark. We reviewed policy documents relating to green infrastructure in the City of Tshwane (Pretoria and surrounds) to look for ways to plan, manage and maintain these green space resources. We also interviewed city officials and held workshops with officials and consultants.

We discovered that Tshwane needs guidelines based on green infrastructure principles. An increase in green infrastructure awareness among city officials and residents will increase the many benefits that green spaces can deliver.

Rapid development

Tshwane is in an area that is rich in biodiversity. It is one of the largest metropolitan municipalities by area in the world – growing at 3.1% a year – and serves as the administrative seat of South Africa's government. Despite the change of government to democratic rule in 1994, the impact of the apartheid era still shows in the city's neighbourhoods and land development. People are still separated spatially and some areas have more services, facilities and access to planned green infrastructure than others.

Figure 1. Green spaces provide benefits for people and nature. Photo by Ida Breed, GRIP Research team

Green infrastructure in Tshwane takes the form of public and private gardens, street trees, community parks, unmanaged vegetated land and reserves. The City of Tshwane bioregional plan 2016 revealed that its biodiverse, protected and ecological areas covered 456,340 hectares – 26% of Tshwane's land.

In any city, expansion often comes at the expense of green spaces. In Tshwane, our research found that the challenges to green infrastructure include rapid development, budget

Figure 2. Urban green spaces, like this stretch of river in Mabopane, have great potential for recreational activities, cultural uses and climate adaptation, Photo by: Maya Pasgaard. GRIP research team

constraints, departmental silos, negative perceptions and limited capacity within departments. Collaboration is also insufficient among different disciplines in the city's departments to manage and sustain green infrastructure.

One official told us:

> *The biggest challenge towards green infrastructure sustainability has to do with rapid developments linked to aspects such as higher rates of formalising the informal settlements, which is difficult for planning to meet up with.*

Another challenge is that of resources. A city official explained that projects like electricity provision and road construction were prioritised above the environment. In her words:

> *If we look at the capital budget, the portion of the budget going into the environment is probably less than one percent.*

We found that the flow of information among departments was limited. One informant said the situation could complicate necessary or urgent decisions and actions. For example, solutions to flooding might need to go beyond the Infrastructure and Engineering department and include the Social and Human settlement department, to help with welfare and relocation.

> *We don't optimise the benefits of understanding the connections and linkages between different departments.*

Another city official argued that residents' perceptions could make or mar green infrastructure planning:

> *People just don't comply with related green infrastructure by-laws because there's not much ecological awareness.*

From our policy documents analysis, the research team discovered that housing, roads, electricity and water were at the top of the government priority list. Most of the yearly budget was directed towards these services. Plans for green infrastructure were mostly embedded in climate action plans.

We believe there are opportunities for balancing the preservation of green spaces and the socio-economic needs of the people by creating multi-functional and beneficial green spaces. The city of Aarhus in Denmark is an example of a city where recently developed urban green spaces provide multi-functional benefits. For example, a new urban park also retains storm water during flooding events.

Transdisciplinarity has lately been highlighted as a way to tackle complex global challenges.

City officials in Aarhus spoke of the way green infrastructure planning should cut across divisions like engineering and housing departments, and across disciplines.

One said:

> *I see a need for trans- and interdisciplinarity within departments; the issue of managing storm water should not only be from the engineering perspectives but from planning and social angle.*

One way to break down departmental silos could be to work together on joint projects.

Balancing needs

Cities need to balance residents' daily needs with the conservation of green spaces for biodiversity, climate change adaptation and environmental health.

Based on the interviews, a way forward is for the city to engage in collaborative processes to create an enabling environment and develop actionable guidelines for people and green spaces to co-exist.

In our research, we mapped out three priority green areas to support Tshwane's biodiversity.

We recommend that the high priority green areas that produce most green infrastructure benefits should be judiciously conserved. The medium priority areas should serve as buffer zones to the critical biodiverse areas that are at risk of climate hazards, fires and the like.

The low priority areas are those with low green infrastructure benefits, characterised by high population density and informal development. These areas are flexible for development.

Green infrastructure planning and management includes increasing awareness of the benefits of green space to government, developers and residents, creating a joint vision and making it clear what's expected from everyone.

Heat stroke deaths: department suggests working early, late hours

Seven workers have died in the Northern Cape this week, linked to the heatwave across the country

Ernest Mabuza

Reprinted from: http://bit.ly/3mSm4Re

Employment and labour minister Thulas Nxesi has called for urgent investigation into the cause of death of the seven farmworkers who died, apparently as a result of heat-stroke, in Kakamas in the Northern Cape last week.

Nxesi on Friday sent condolences to the families of those who died in what is alleged to be linked with the sweeping heatwave experienced by the entire country, and the Kakamas region in particular.

"In passing condolences to the affected families and calling for urgent investigations, as the department of employment and labour — we will do our best to support and provide necessary services to the affected families," Nxesi said.

According to the department's inspectors, every employer was expected to conduct a risk assessment of the workplace, and when any of the identified risks changed, the employer needed to introduce mitigating measures, especially in this instance where there was a risk of temperatures rising to 51°C.

Nxesi said inspectors were conducting inspections and have recommended that farm workers work from 4am to 11am and resume work at 5pm to 7pm.

In Kakamas, the sun sets at 8pm during this season.

Figure 1. Employment and labour minister Thulas Nxesi has sent condolences to the families of seven workers who died in the Northern Cape last week. Image: Freddy Mavunda/© Business Day

How five Renosterveld antelope use our altered landscapes

Nande Notyalwa

Current Address: Overberg Renosterveld Conservation Trust

Reprinted from: https://bit.ly/3n0RaWW

A striking feature of the Overberg's Renosterveld is its highly transformed and fragmented state. Renosterveld has seen huge declines in the abundance of plant and animal species. Yet somehow it still holds remarkable diversity. Regions that have seen agricultural transformation, like the Overberg, may however provide novel habitats that help certain animals to survive.

These are the findings of Nelson Mandela University's MSc researchers Amauréé Jansen van Vuuren and Hermanus Swanepoel, who investigated how five small antelope species have adapted to a landscape irreversibly impacted by humans in the Overberg.

They chose these five focus species:

- Grey Rhebok (*Pelea capreolus*)
- Steenbok (*Rhaphicerus campestris*)
- Bushbuck (*Tragelaphus sylvaticus*)
- Common duiker (*Sylvicapra grimmia*)
- Cape Grysbok (*Rhaphicerus melanotis*).

The researchers sought to determine how the matrix of farms and the remaining Renosterveld fragments impact on the occupancy of these browsing species between De Hoop Nature Reserve and the surrounding farms.

The ORCT's Haarwegskloof Renosterveld Reserve formed part of the study. They also looked at the forage selection for each species – to see how dependent they were on the transformed agricultural land versus the remaining Renosterveld fragments for food.

The studies found that Grey Rhebok, Steenbok and Duiker are more common on agricultural land in comparison to Renosterveld and fynbos. On the other hand, Bushbuck and Cape Grysbok were as likely to be found on transformed land as on Renosterveld fragments.

You are what you eat

The diet of each species was then studied in more detail to see how they were influenced by the fragmentation of the landscape.

The Bushbuck, Steenbok and Grey Rhebok diets mainly consisted of agricultural crops rather than natural veld. The researchers therefore assumed that these species not only choose crops over natural vegetation when foraging, but that

Figure 1. Grey Rhebok (*Pelea capreolus*)

Figure 2. Cape Grysbok (*Rhaphicerus melanotis*)

Figure 3. Common duiker (*Sylvicapra grimmia*)

Figure 4. Steenbok (*Rhaphicerus campestris*)

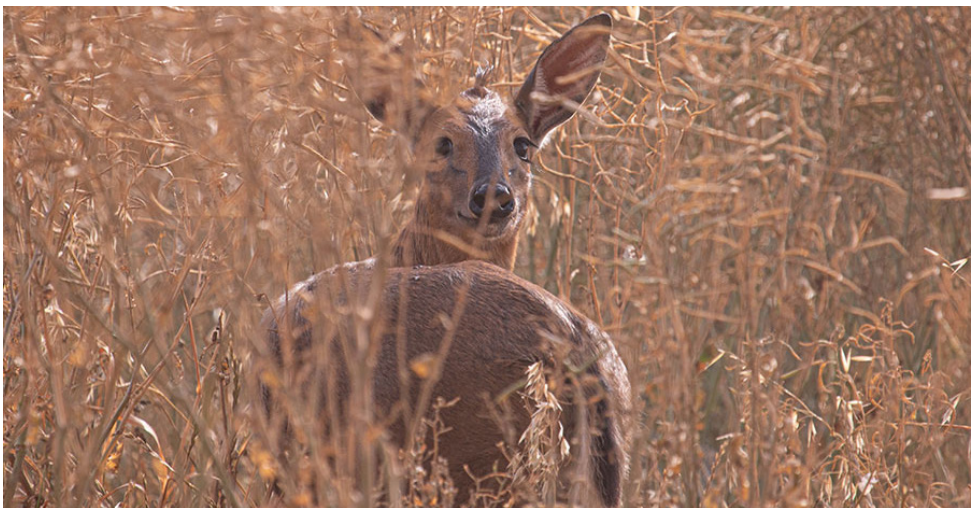

Figure 5. Common duiker (*Sylvicapra grimmia*)

they also therefore would spend more time in crop areas versus natural areas. It's known that Steenbok occupy surprisingly open areas. While Bushbuck may move to areas with vegetation cover to avoid predators, they can be lured back out by attractive food in the agricultural land, as well as by other Bushbuck.

Grey Rhebok are deemed to be mixed feeders, as they occur naturally within open grasslands. As such, their foraging within agricultural lands is not unexpected owing to the resemblance between the landscapes.

The researchers found that Cape Grysbok and Common Duiker diets consisted mainly of natural vegetation, supplemented with some crops species. Both species seem to frequently benefit from Renosterveld.

However, they are not wholly dependent on it. The analysis showed that their preferred natural forage plants were Hermannia species, as they are highly palatable. Within agricultural lands, barley was the favourite as a result of its high nutrient-rich content.

The importance of Renosterveld as a food source

The research has demonstrated how certain antelope species readily make use of resources available in an altered landscape while other species still largely depend upon the remaining fragments of Renosterveld. Nonetheless, species that mainly consume natural vegetation occasionally supplement their diets within the agricultural lands.

This once again highlights the importance of conserving and protecting Renosterveld in its entirety.

A thank you to researchers Amauréé Jansen van Vuuren and Hermanus Swanepoel, their supervisors, Nelson Mandela University, the Overberg farming community and particularly farmers that allowed research to be conducted within their properties!

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Green Scorpions investigate parcel containing reptiles at PostNet

Albi Modise

Current Address: Department of Forestry, Fisheries and the Environment
Reprinted from: https://bit.ly/3n64F80

Members of the Department of Forestry, Fisheries and the Environment's Environmental Management Inspectors, more commonly known as the Green Scorpions, have confiscated a number of reptiles that were allegedly being smuggled from Gauteng to KwaZulu-Natal (KZN) using PostNet.

The parcel confiscated on 8 February 2023 contained Sungazer lizards and a venomous snouted cobra as well as another type of girdled lizard and two indigenous skinks. Two men have been arrested on charges of the illegal possession, transport and illegal trade in species listed in terms of the Threatened or Protected Species (TOPS) Regulations under the National Environmental Management: Biodiversity Act (NEMBA).

Following the arrest of the men at the PostNet branch in Pretoria, their home was searched by the Green Scorpions, supported by SAPS K9 unit. A total of 19 reptiles and amphibians were seized during the searches. These included African bull frogs and an African rock python, which are listed on the threatened or protected species list. Other reptiles found on the premises are listed in terms of the Gauteng Provincial Nature Conservation Ordinance.

The accused, Barend (Johan) Coetzee (28) and Xander Aylward (19), appeared in the Cullinan District Court on 10 February 2023. The men have been released on bail and the matter has been postponed to 30 March 2023 for further investigation.

The department applauds members of the public who assist in reporting any suspicious activity that could be linked to wildlife crime.

To report wildlife crime, call 0800 205 205

Figure 1. Sungazer lizards

Figure 2. African bull frog

Figure 3. Terrapin

A globally invasive plant species: *Rumex crispus L.*

Oladayo Idris

Current Address: Department of Animal and Plant Systematics
Reprinted from: http://bit.ly/3TrmQ3N

Rumex crispus is an invasive plant species found worldwide. In English, it is known as curley or curly dock, yellow dock, narrow-leaf dock, and sour dock. It is known as ubuhlunga in Xhosa and idolo lenkonyana in Zulu. In Afrikaans, it is known as krultongblaar and occasionally weeblaar. The plant originated in Europe and Western Asia but spread to all continents (except Antarctica) and can now be found in almost all parts of the world. It is said to be among the top five most widely distributed plants in the world. We may have seen it in quite a number of places, primarily in wetlands and on dry land, particularly in agricultural areas, grasslands, and waste lands (see pictures).

The genus name "Rumex" is thought to be derived from "rumo", the Latin word for "docks", which describes the ancient Roman practice of sucking the leaves for moisture. Rumex is also believed to have originated from the Latin rumex ("sorrel"), which describes the brown colouration and red tint of the leaves. Another account has it that the word "rumex" probably comes from the Greek word "spear" or "dart", with reference to the spear-shaped leaves. The species name "crispus", on the other hand, means "curled", which alludes to the wavy and curly leaves of the plant. *Rumex crispus* belongs to the family *Polygonaceae* and is a perennial plant that can survive for several years by means of a fleshy taproot.

Rumex crispus is a herb that grows upright or semi-upright, 40–150 cm tall, with an extended flower stalk or inflorescence. The leaves are smooth with distinctively curled edges and grow up to 24 cm in length. The greenish or reddish-tinged flowers are produced in clusters on the stalk, which produces 2–3 mm long, angular, glossy, dark brown seeds. The root is large and carrot-shaped (it can grow up to 20–30 cm), with a dark brown exterior and a yellow-to-orange interior. As a result of the plant's roots, it can withstand harsh conditions and regenerate when conditions are favorable, giving it considerable longevity. This also makes it difficult to control as a weed. It is tolerant or resistant to a number of herbicides. However, R. crispus can be controlled by either a single or combined herbicide. According to studies, sulphonylurea herbicides, such as thifensulfuron, and synthetic auxin herbicides, such as MCPA and Dichlorprop-P, in combination or independently, have been used successfully to control the plant.

Figure 1. *Rumex crispus* plant (Source: https://plants.ces.ncsu.edu/plants/rumex-crispus/)

Figure 2. *Rumex crispus* plant with flower stalk or inflorescence(Source: https://ngpherbaria.org/portal/taxa/index.php?taxon=2781&clid=4026#)

This invasive plant does have benefits.

Figure 4. Fruits of *Rumex crispus* (Source: https://commons.wikimedia.org/wiki/File:Rumexcrispus.jpg)

Figure 5. Seeds of *Rumex crispus* (Source: https://plants.ces.ncsu.edu/plants/rumex-crispus/)

The leaves are eaten as a wild vegetable in some parts of the world, including the Eastern Cape Province.

It is an excellent source of both vitamin A and C, as well as a source of iron and potassium. Nevertheless, it should be consumed with extreme caution as it has a high antinutrient (oxalic acid and tannin) content, which is linked to irritation of the urinary track and can cause kidney stones.

Prior to the development of modern medicine, it has been commonly used in traditional medicine for the treatment of wounds, blood and skin diseases, jaundice, sore throats and coughs, for de-worming, as a laxative, astringent, liver stimulant, and in the treatment of cancer.

Reprinted with the kind permission of the National Museum, Bloemfontein.

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South Africa translocates 12 cheetah to India in a cooperation agreement

Albi Modise

Current Address: Department of Forestry, Fisheries and the Environment
Reprinted from: https://bit.ly/42ljBPD

Twelve cheetahs will later today [17 February 2023] depart from South Africa for India as part of an initiative to expand the cheetah meta-population and to reintroduce cheetahs to a former range state following their local extinction due to over hunting and loss of habitat in the last century.

The cheetah will join eight of the mammals relocated to India's Kuno National Park from Namibia in September 2022.

Earlier this year, the governments of South Africa and India signed a Memorandum of Understanding (MoU) on Cooperation on the Re-introduction of Cheetah to India. The MoU facilitates cooperation between the two countries to establish a viable and secure cheetah population in India; promotes conservation and ensures that expertise is shared and exchanged, and capacity built, to promote cheetah conservation. This includes human-wildlife conflict resolution, capture and translocation of wildlife and community participation in conservation in the two countries.

Conservation translocations have become a common practice to conserve species and restore ecosystems. South Africa plays an active role in providing founders for the population and range expansion of iconic species such as cheetahs.

"It is because of South Africa's successful conservation practices that our country is able to participate in a project such as this - to restore a species in a former range state and thus contribute to the future survival of the species," said the Minister of Forestry, Fisheries and the Environment, Ms Barbara Creecy.

The cheetah, *Acinonyx jubatus*, is the world's fastest mammal, and is endemic to the savannahs of Africa. While southern Africa is the cheetah's regional stronghold, it is considered to be a vulnerable under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and is listed in Appendix I. The cheetah was declared extinct in India in 1952. Restoring cheetah populations is considered by India to have vital and far-reaching conservation consequences, which would aim to achieve a number of ecological objectives, including re-establishing the function role of cheetah within their historical range in India and improving the enhancing the livelihood options and economies of the local communities. Following the import of the 12 cheetahs in February, the plan is to translocate a further 12 annually for the next eight to 10 years. Scientific assessments will be undertaken periodically to inform such translocations.

Worldwide, cheetah numbers have declined from an estimated 15 000 adults in 1975 to a current global population of less than 7 000 individuals. In South Africa, the transition to democracy had substantial implications for wild cheetah conservation. The Game Theft Act (No. 105 of 1991) was responsible for a major change in land use from agriculture to ecotourism. Since 1994 cheetahs have been reintroduced into 63 newly established game reserves that currently support a combined metapopulation of 460 individuals. The Department of Fisheries, Forestry and the Environment has approved the export of up to 29 wild cheetah per annum to support conservation efforts for the species outside of the country.

Concerted efforts were made to select the best possible cheetah for the reintroduction effort. All 12 cheetahs are wild born, have grown up amongst competing predators including lion, leopard, hyena and wild dogs. They are considered predator savvy and should respond appropriately when they encounter a new predator guild in India that includes tigers, leopards, wolves, dholes, striped hyena, and sloth bears. The cheetahs were kindly made available by Phinda Game Reserve (3), Tswalu Kalahari Reserve (3), the Waterberg Biosphere (3), Kwandwe Game Reserve (2) and Mapesu Game Reserve (1) and their translocation is in line with IUCN Guidelines for Reintroductions and Other Conservation Translocation and in accordance with international veterinary standards and protocols.

This multi-disciplinary international programme is being coordinated by the Department of Forestry, Fisheries and the Environment (DFFE), the Department of International Relations and Cooperation (DIRCO) in collaboration with the South African National Biodiversity Institute (SANBI), South African National Parks (SANParks), The Cheetah Metapopulation Initiative, the Faculty of Veterinary Science of the University of Pretoria and the Endangered Wildlife Trust (EWT) in South Africa together with the Ministry of Environment, Forest and Climate Change of India, the High Commission of India, the National Tiger Conservation Authority (NTCA) and the Wildlife Institute of India (WII) and Madya Pradesh Forest Department.

A 500-year-old medicine container discovered near Misgund, Eastern Cape, South Africa: Residue characterisation by GC-MS

Justin Bradfield, Stephan Woodborne, Jeremy Hollmann and Ian Dubery

Current Address: University of Johannesburg
Reprinted from: http://bit.ly/3LxzNqQ

The chance discovery of a 500-year-old cattle-horn container in a painted rock shelter on the farm La vie D'Antan in the Eastern Cape Province of South Africa sheds new light on the antiquity of traditional medicines in the region. We report the micro-residue and GC-MS results of the solidified substance found inside the horn container. Several plant-based medicinal compounds were tentatively identified, of which monomethyl inositol and lupeol are the most prevalent.

Based on pharmacobotanical studies, we suggest the most probable ailments the medicine would have been used to treat and propose the most likely plants from which the ingredients were sourced. Apart from the rock art, whose contemporaneity has not been established, there is no associated archaeology from which to draw specific cultural associations. Although people clearly have been aware of the medicinal properties of plants for at least the last 200 000 years, this is, to our knowledge, the oldest evidence from southern Africa of a bespoke container that has been used to store multiple combined ingredients of medicinal application.

The age of the contents of the horn container, however, could not be independently established, leaving

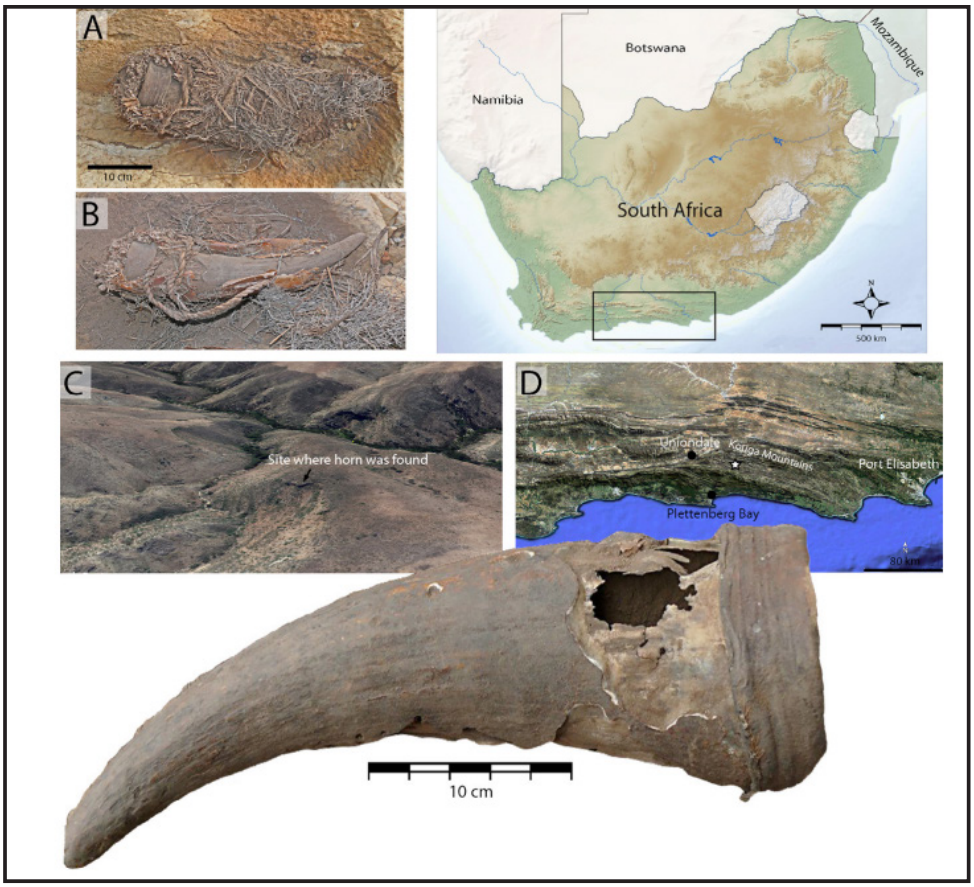


Figure 1. The horn container after excavation (large inset) and at two stages of the recovery of the parcel: (A) the parcel tightly bundled with Boophane disticha leaves and grass, wrapped together with plant fibre rope and (B) partially unwrapped exposing the horn container. (C and D) The location of the rock shelter on the farm La vie D'Antan.

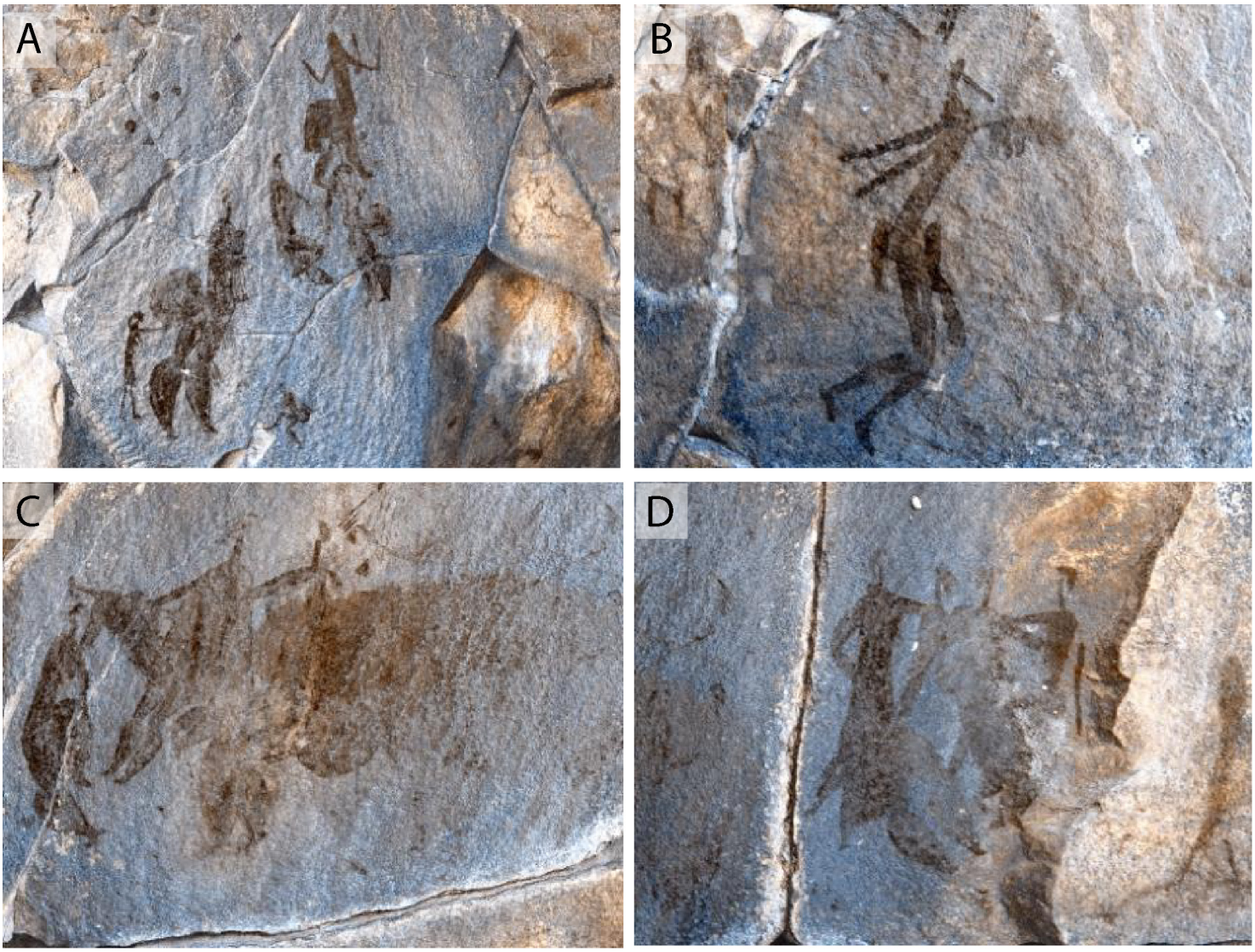


Figure 2. Examples of rock art from La vie D'Antan and neighbouring sites. Images have been digitally enhanced using colour deconvolution. The original colour is a red hue.

open the possibility that the medicinal container and its contents may not be contemporaneous.

Significance

- We present the oldest medicine container yet found in southern Africa combining two or more plant ingredients.
- The findings add to our knowledge of traditional Khoisan medicines and the antiquity of this traditional knowledge system.

Read the full article here (South African Journal of Science, Vol. 119 No. 1/2 (2023)

Figure 3. Close up of horn.

Ekologiese Restourasie in Namakwaland

Peter J Carrick, M Susan Botha and Raldo Kruger

Reprinted from: https://bit.ly/3z6Il0N

Although based on robust science, the book is about 'can-do'- farmers, miners, consultants, government regulators and industry can, and should, all use this book to make a change in their patch. Written to be accessible to all, the nine chapters represent a state-of-the-art restoration tool-kit for Namaqualand.

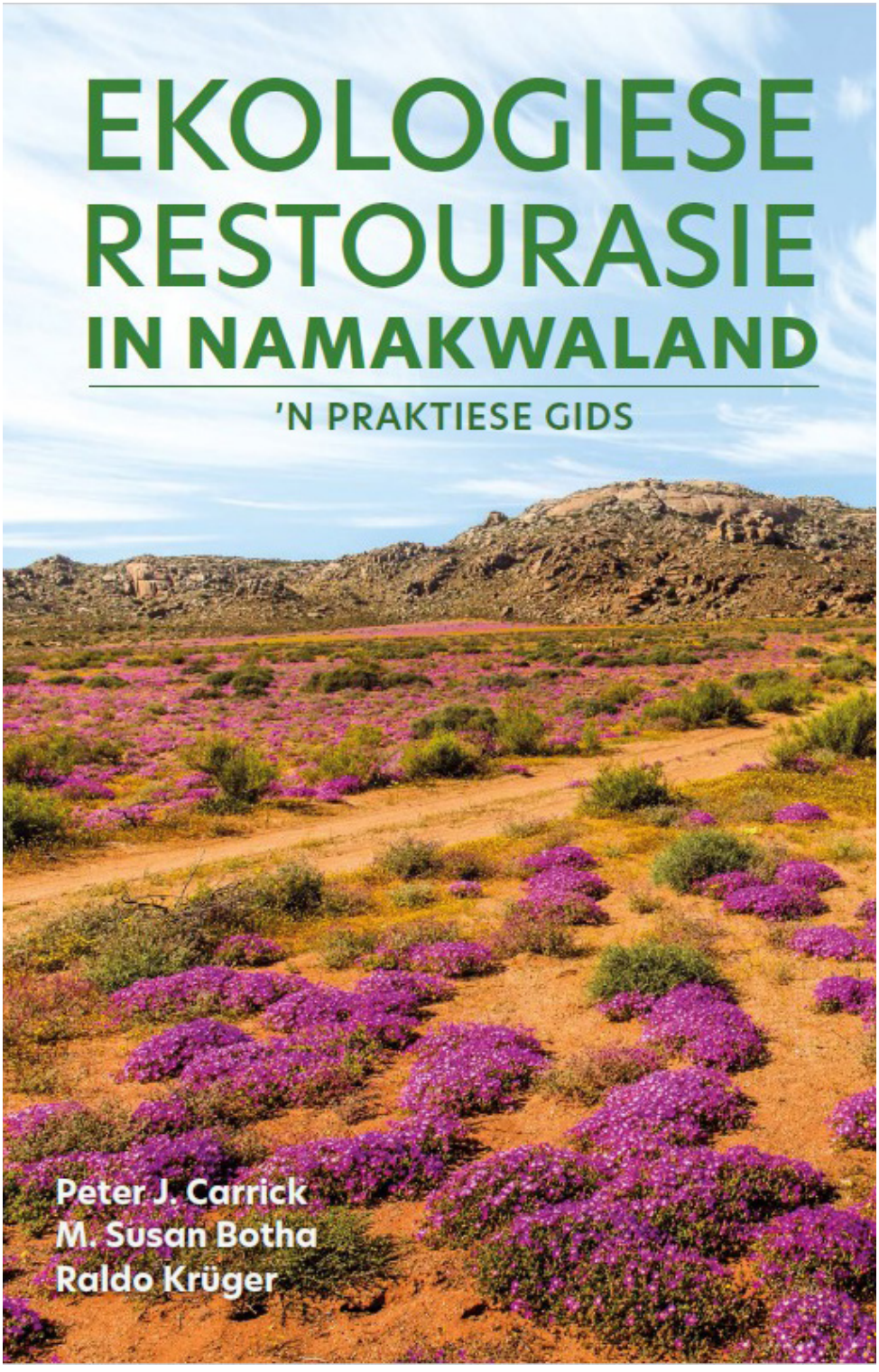
The book is written in Afrikaans.

The book starts with a comprehensive introduction to the region, its uniqueness, history, diversity, and the impacts to its ecosystem. This leads onto Chapter 2 which introduces the plant life, their adaptations and ecology of the region. Important aspects of restoration are covered in Chapter 3: how to get the soil right. Innovative methods used to stabilise land surfaces in areas where high winds and localised flooding occur due to the absence of plant life are covered in Chapter 4. The art and science of seed collection is introduced in Chapter 5, ensuring restoration opportunities are maximised by fleeting periods of seed ripeness. Chapter 6 covers the "restoration packs", where the team devised unique approaches for creating plant recruitment niches and microhabitats to maximise restoration success. Chapter 7 and 8 discuss direct transplanting and nursery production methods. The final chapter provides an innovative and user-friendly 100-point system to assess restoration success.

Important concepts are presented with colourful, illustrated and impactful photographs and sketches. Although focused on restoring the Namaqualand; the methods discussed also apply to ecosystems in other regions of the Karoo and further semi-desert regions where shrubs, herbs and succulents occur.

I recommend this book to all who care for the planet and the protection of unique and irreplaceable places like Namaqualand.

Written by Kingsley Dixon, Chair, Society for Ecological Restoration, John Curtin Distinguished Professor, Curtin University, Australia for Kirstenbosch Bookstore.

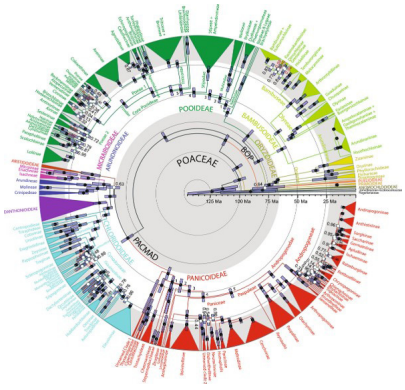


Go check out the following

Websites, Webinars & Podcasts

RESEARCH ARTICLE | Grasses through space and time: An overview of the biogeographical and macroevolutionary history of Poaceae

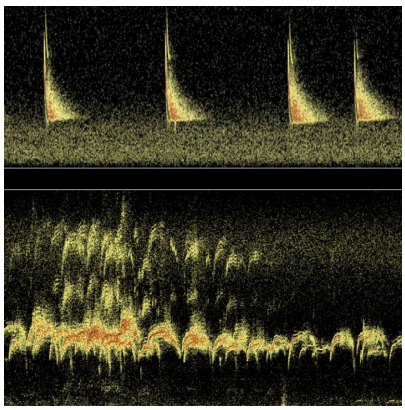
In lieu of grass of the month we have a research article with an extensive review of the extant diversity and distribution of grass species, molecular and morphological evidence supporting the current classification scheme, and the evidence informing our understanding of the biogeographical history of the family. Journal of Systematics and Evolution Volume 60, Issue 3 p. 522-569. Read the article here.



RESEARCH ARTICLE | Using microphones (acoustic monitoring) as a passive ecosystem monitoring tool

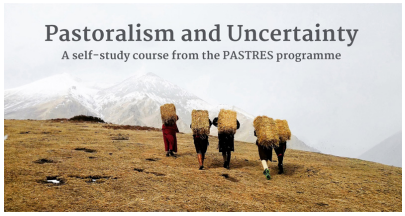
Here are two research articles and a guideline from WWF on the use of acoustics or sound patterns to detect ecosystem changes. The idea is that the soundscape and the diversity of noises can be related to species richness (and identify certain vocalising species), landscape and vegetation structures (e.g. habitat type, canopy height) and land use intensity and even the presence of invasive species.

- Land-use intensity and landscape structure drive the acoustic composition of grasslands (Agriculture, Ecosystems & Environment Volume 328). Read more.
- Analysis of Soundscapes as an Ecological Tool (Exploring Animal Behavior Through Sound: Volume 1). Read more.
- Read: https://link.springer.com/chapter/10.1007/978-3-030-97540-1_7
- WWF's guidelines on acoustic monitoring as a conservation technology: Passive acoustic monitoring in ecology and conservation. Read more.



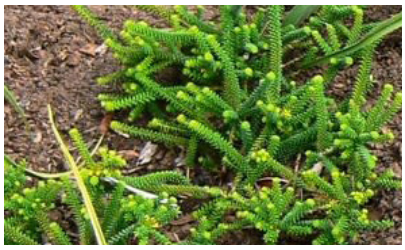
ONLINE COURSE | PASTRES: Pastoralism and Uncertainty

A self-pace free online introductory course aimed towards students, practitioners and policymakers. This course introduces key concepts, case studies, and questions around pastoralism based on the PASTRES programme and made available through the support of the European Research Council (ERC). Visit this link.



PODCAST | Illegal harvesting for traditional medicine

Lester Kiewit speaks to Rupert Koopman, a botanist, Willem Boshoff, Newlands Forest Conservation founder and Ralf, a farmer about Cape Town residents harvesting local flora for medical use. Listen here.



VIDEO | Minister Creecy statement on World Wetlands Day

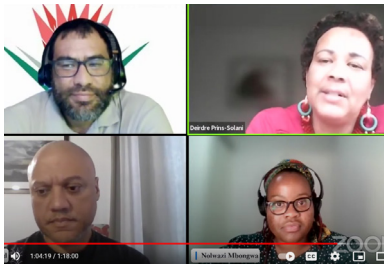
On World Wetlands day, 2 February 2023, Ms Barbara Creecy, the Minister of Forestry, Fisheries and the Environment, called on all South Africans to collaborate in the protection of wetlands. "90% of the world's wetlands are either degraded or lost, and this is problematic, in fact we are losing wetlands three times faster than forests and so we need to do something to raise awareness on the threats that they face on a global scale," said Minister Barbara Creecy. Watch it here.

Go check out the following

Websites, Webinars & Podcasts

VIDEO | Past Webinar: People, Plants and Heritage

Watch this past BotSoc Webinar on our place in our natural and cultural heritage regarding our plants. Rupert Koopman in conversation with heritage specialist Nolwazi Mbongwa, Deidre Prins-Solani and Glynn Allard. Watch it here.



VIDEO | Another potentially deadly heatwave in Northern Cape

SABC News: Another potentially deadly heatwave has hit the Kai !Garib and Dawid Kruiper municipal areas in the Northern Cape. This is the same area in which eight farmworkers died of heatstroke earlier in the year. Temperatures are expected to reach the mid-40s for the next few days. Visit this link.

VIDEO | The Polyphagous Shothole Borer's effect on South Africa's trees

With the recent infestations of the Polyphagous Shothole Borer's in Cape town, here is a 2-minute animation produced by the University of Pretoria about the Polyphagous Shothole Borer. It gives a concise overview on the beetle in laymen's terms, actions to help curb the spread, and what to do if you suspect an infested tree in your area. Visit this link.

VIDEO GAME | Food For Mzansi's Minecraft Farm

Food For Mzansi has created a Minecraft World with virtual farm. Mzansi Master builders is an initiative aimed at introducing the youth to the wonders of agriculture, agri-tech and mechanisation through Minecraft. Food For Mzansi's head of creative and development, Gareth Davies says "The goal is to engage learners, from primary to high school and everyone else who is young at heart. By playing the game, they will get to know more about agricultural automation, mechanisation and agritech". All South African's can play for free via a smartphone, laptop, or console. See a video demo of the game here and to join visit this link.

Upcoming events

14 – 19 May 2023

International Grassland Congress - Kentucky, USA

Grassland for Soil, Animal & Human Health

The Organizing Committee of the XXV International Grassland Congress, on behalf of the American Forage and Grassland Council, cordially invites you to participate in the International Grassland Congress on Grassland for Soil, Animal & Human Health at the Northern Kentucky Convention Center in Covington, Kentucky, USA. Visit www.internationalgrasslands.org/2023-igc

24 – 28 July 2023

GSSA Congress 58

Our annual congress is coming up! This year it will take place at Omaramba, Rustenburg, North West Province. Abstract submissions are open until 5 May 2023. Visit https://grassland.org.za/ for more information.

5 – 10 November 2023 (Hybrid event)

The Conservation Symposium

A symposium centred around conservation with a range of topics: environmental law and international agreements, data management, social science, community-based research, social ecology, species monitoring and introductions, new technologies, poaching and wildlife trade. A hybrid event with a central venue for live streaming pre-recorded and live presentations to multi-hub meetings scattered across the country, the continent, and the globe so that it continues to be affordable and inclusive but also allows for face-to-face networking and a social aspect to be catered for. Visit https://conservationsym2022.dryfta.com/ for more. They have also published a range of previous years sessions on youtube, visit www.youtube.com/channel/UCvyZzpvvv9mc3MCKnOLs1fA

If you would like to advertise your upcoming event, please contact us and we will include it in our next edition.

Upcoming events

Regular courses throughout the year

Fynbos Identification Courses

Wendy Hitchcok, a botanist and environmental educators regularly offers 4-day fynbos plant identification courses in Cape Town. For information visit: https://wendyhitchcock.co.za/#courses

10 – 15 September 2023

SAWMA Conference 2023

Golden Gate Highlands National Park

The Southern African Wildlife Management Association (SAWMA) conference, hosted by the University of the Freestate. Will take place later this year at the Golden Gate Highlands National Park. Conference attendees can expect various topics and disciples including wildlife research, conservation science, ecology, genetics, and animal science. Visit: https://sawma.co.za/ for more information.

They are also fundraising to support students in attending their conferences, to see more visit https://sawma.co.za/help-our-students/

If you would like to advertise your upcoming event, please contact us and we will include it in our next edition.

Deadlines for

Newsletter of the Grassland Society of Southern Africa

Grassroots

submissions

~~Issue 1: 1 February 2023~~

Issue 2: 1 May 2023

Issue 3: 15 August 2023

Issue 4: 1 November 2023

Please visit
www.grassland.org.za/publications/grassroots/submit-to-grassroots-now
for submission guidelines.

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