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The meaning and practice of stewardship in South Africa

Stewardship offers a means of addressing social-ecological sustainability challenges, from the local to the global level. The concept of stewardship has had various meanings attached to it over time, and the links between the theory and practice of stewardship are not well understood. We sought to characterise the practice of stewardship in South Africa, to better understand the relationship between theory and practice. We found that practitioners' understandings of stewardship coalesce around two core notions: the idea of stewardship as 'responsible use and care' of nature, and stewardship as a 'balancing act' between stewards' use of natural resources for agricultural production and their responsibility to protect and manage the wider ecosystem. Stewardship practice in South Africa is strongly influenced by the biodiversity stewardship tool; however, many practitioners are integrating biodiversity stewardship with other approaches. These emerging social-ecological stewardship initiatives operate at landscape-level and work towards integrated social and ecological stewardship outcomes, by facilitating collaboration among diverse stakeholders. Further research is needed to better understand what is required to support these integrated, collaborative and cross-sectoral initiatives. Policy mechanisms that facilitate integrated place-based stewardship practice can contribute to expanding the practice of biodiversity stewardship in South Africa.

Significance:

- Our findings contribute to a growing understanding of what stewardship looks like in South Africa and how it is put into practice.
- We show that biodiversity stewardship is a prevalent understanding of stewardship practice in South Africa and is often combined with other approaches for sustainable landscape management.
- A broader understanding of stewardship, for example through the concept of social-ecological stewardship, can enable more integrated, collaborative approaches to landscape management, addressing the wide range of environmental and social development challenges faced in rural landscapes across South Africa.

Introduction

Stewardship has been put forward as a means of minimising human impacts on ecosystems and calls for stewardship abound in the literature.[1-4] If stewardship is considered a significant part of the solution to ecosystem degradation, and key to sustainability of social-ecological systems, how can it be achieved in practice? A challenge in answering this question is that the links between the theory (knowing) and practice (doing) of stewardship are underdeveloped.[4,5] Moreover, heightening this challenge, there is a variety of interpretations of the concept.

Recent research in South Africa indicates that while the practice of stewardship in the country is dominated by a fairly narrow biodiversity conservation focus through the 'biodiversity stewardship' tool (described below)[6,7], there is also evidence of a diversity of more holistic, integrated practices emerging[8]. The diversity of meanings attached to stewardship, the specific local practices, and on-the-ground stewardship practitioners' perspectives have, however, not been explored. In this study, we respond to the need to bridge the knowing–doing gap by investigating how stewardship practitioners apply theoretical ideals of stewardship in practice in South Africa. We do this by investigating the meaning and practice of stewardship, and by exploring the links between how stewardship is understood in theory and the ways in which it is actually put into practice.

A review of the theory of stewardship in the literature reveals stewardship as a complex, ever-changing concept with a diversity of understandings which have emerged over time[9,10] (Figure 1). The changing meanings of stewardship mirror shifts in environmental ideologies[5,11,12] and do not have distinct start and finish points in time. Consequently, a variety of meanings still persist, to a greater or lesser extent, in the present day. In all these conceptualisations, stewardship is a metaphor which describes a distinct kind of human–nature relationship.[13] Over time understanding of stewardship has largely shifted towards one which incorporates concerns for social justice, democracy and pluralism, and which provides a broad and deep ethical basis from which human responsibility and care for nature arises.[14-16] The more recent interpretations indicate a shift in discourses and ideologies towards more integrated, systemic understandings of the relationship between humans and nature (for example through the metaphor of social-ecological systems) – different from previous interpretations based on a more dualistic relationship (Figure 1). Of course, a plethora of understandings of stewardship also exist among diverse indigenous groups across the world.[17,18] However, these indigenous understandings are poorly documented and not well represented in English-language academic literature. Therefore, while recognising the importance of exploring these, for the purpose of this study we focus on recent definitions from the literature to capture the essence of recent stewardship theory.

We acknowledge and make use of several recent definitions of stewardship to provide the conceptual framing for this study. An important distinction that sets these selected definitions apart from other interpretations of stewardship, is that stewardship is largely a collaborative endeavour, bringing together multiple, diverse stakeholders.[8,19,20] As such, and with its applicability to a broad range of environmental concerns, the concept has appealed to

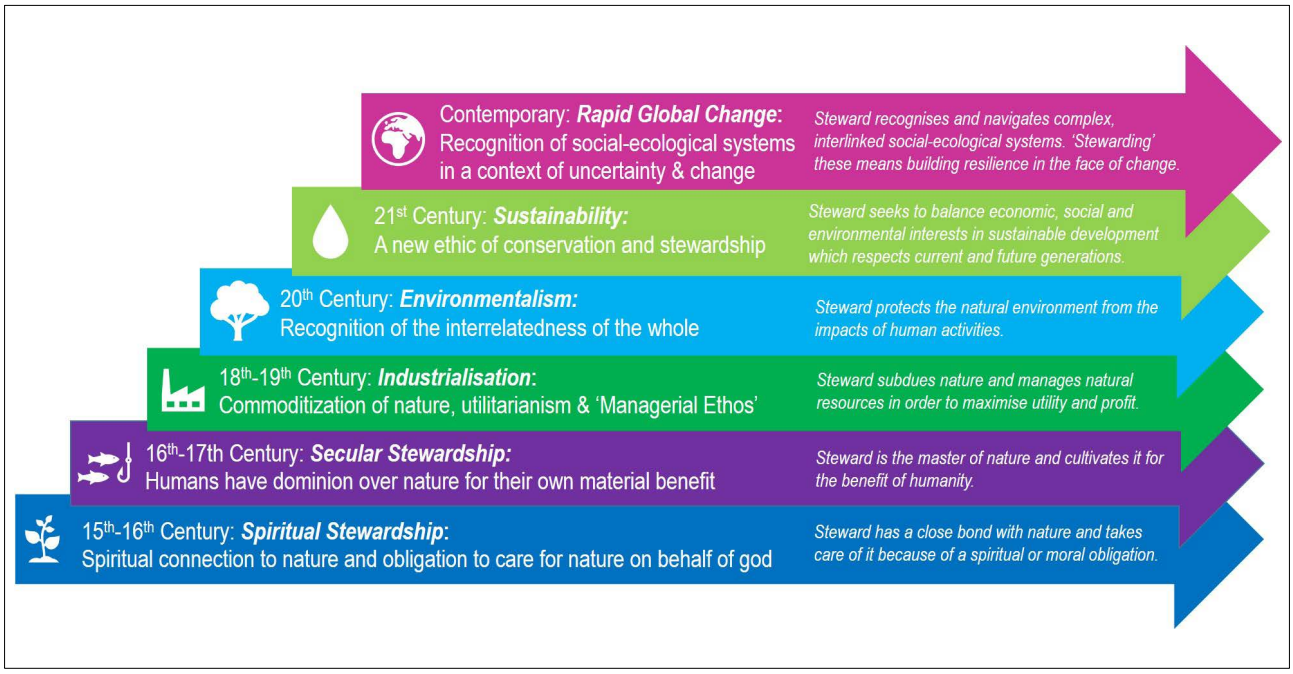

Figure 1: The changing meanings of environmental stewardship in Western history (adapted from Worrell and Appleby[5], Berry[11] and McArthur[12]).

the sustainability sciences and social-ecological systems fields[3,4,9,21], despite widely debated critiques of the concept[11,14,17].

Firstly, as a starting point we recognise the term 'environmental stewardship' proposed by Welchman[14] which captures the classical moral-ethical root of stewardship, whilst remaining relevant in the contemporary context. Welchman defines environmental stewardship as the

> *responsible management of human activity affecting the natural environment to ensure the conservation and preservation of natural resources and values for the sake of future generations of human and other life on the planet, together with the acceptance of significant answerability for one's conduct to society.*[16(p.303)]

Secondly, we use the concept of *ecosystem stewardship*, along with key principles which set it apart from other definitions and illustrate its roots in resilience thinking and social-ecological systems research.[21,22] Ecosystem stewardship is a specific management-oriented example of the most recent understandings of stewardship, and is defined as

> *a strategy to respond to and shape social-ecological systems under conditions of uncertainty and change to sustain the supply and opportunities for use of ecosystem services to support human well-being.*[2(p.241)]

Key principles of ecosystem stewardship include[2,17]: a management approach underpinned by resilience thinking[22]; recognition of ecosystems which provide diverse ecosystem services rather than single resources; stewardship which recognises stewards as an integral part of the system they manage and the inherent responsibility they hold; the need for stewards to work collaboratively with multiple stakeholders; and the need for stewards to anticipate and respond to social-ecological change and shape it for sustainability to avoid loss of future options for the system.

Thirdly, we use the term 'social-ecological stewardship' as a broad umbrella term to refer to the most recent understandings of stewardship, to encapsulate the classical interpretations of stewardship and recent links to the social-ecological systems concept.[23]

What about the practice of stewardship? We use the term 'practice' as it is defined in the Oxford English Dictionary: 'The actual application or use of an idea, belief, or method, as opposed to theories relating to it'[24]. Thus, the practice of stewardship is the actual, practical application of the concept of stewardship in a particular place or context. Worldwide, the concept of stewardship is put into practice in a diversity of ways.[4,5,9] One of the key features that stewardship practices have in common, despite the diversity of understandings, is volunteerism, and a focus on the actions and participation of local people in natural resource management.[4,25] Stewardship initiatives focus on engaging the efforts, time and resources of local people who utilise natural resources, and on facilitating their ability to steward, or to take care of, natural resources at the local level.[4,16,25] Such locally oriented stewardship activities have emerged across a variety of sectors, including fisheries, agriculture, forestry, protected areas, wildlife, ecosystem services and water management, and span rural and urban environments.[4] Thus, putting stewardship into practice is both about the practical application of the theory or ideals of stewardship, and about moving from the ethic of stewardship held by individuals, to tangible actions based on that ethic.[4,5]

In this study we focus on stewardship initiatives practised in rural landscapes in which agriculture is one of multiple land use activities, i.e. in multifunctional landscapes.[26] Such landscapes face particular challenges and opportunities for integrating social-ecological stewardship outcomes and are a commonly practised form of stewardship in South Africa.[27] Globally, stewardship practice in landscapes includes policy-driven private land conservation tools such as conservation easements and land trusts in the United States of America[28], and the biodiversity stewardship programme in South Africa[7,19]. This particular approach to stewardship in policy and practice in South Africa, is defined as follows:

> *Biodiversity stewardship is an approach to securing land in biodiversity priority areas through entering into agreements with private and communal landowners, led by conservation authorities.*[7]

Agri-environmental tools are also forms of stewardship practice and are similar to private land conservation initiatives. They include Agri-environmental and Countryside Stewardship Schemes in Europe and the United Kingdom[29,30], the Environmental Farm Plan Programme in Canada[20] and Land Care initiatives in Australia[31]. Stewardship is also put into practice in landscapes through watershed or catchment management

initiatives focused on improved land use management for catchment health[32,33], and through integrated landscape approaches[34,35] which vary across the spectrum from formal to informal. Another means of realising stewardship in practice in landscapes, which varies from policy-driven to informal bottom-up initiatives, is through a variety of informal community-based, common pool resource management initiatives in a diversity of contexts.[25,36,37]

These stewardship-in-practice initiatives vary according to a number of features (comparable to conceptual frameworks of stewardship recently proposed by Bennett et al.[4] and Peçanha Enqvist et al.[38]) which include their approach, objectives and stewardship actions. We use these features as a means of exploring stewardship practice in South Africa. These initiatives also vary in their alignment with the notion of social-ecological stewardship. We adopt this term here as an umbrella term for the most recent understandings of stewardship, using it as a lens to investigate how recent stewardship theory is put into practice in the South African context.

Working in the context of these landscapes, our study builds on recent global literature[4,9,16,23,38], and specifically extends Barendse et al.'s[8] study of South African stewardship initiatives that contribute toward sustainability and conservation outcomes by offering detailed, localised, practice-based understandings and insights from stewardship practitioners working in rural multifunctional landscapes. We explore three key areas: (1) the meanings of stewardship held by stewardship practitioners who are implementing stewardship at the local level; (2) how they are putting stewardship into practice; and (3) whether there is evidence of the more recent concept of social-ecological stewardship being applied in practice in the context of multifunctional landscapes.

Methods

Data collection

We collected data through a countrywide survey of stewardship practitioners.[39] We define stewardship practitioners as professionals from a variety of organisations working with local land owners and land users (or stewards) to bring about improved stewardship,[4] i.e. they facilitate stewardship in rural landscapes. We drew participants from the stewardship practitioner community across South Africa working in rural landscapes, making a concerted effort to reach out to people working in relevant sectors other than conservation (which is a well-represented sector in the biodiversity stewardship community), such as agriculture, rural development and water management. Almost half the sample worked with approaches other than biodiversity stewardship (see 'Respondents' stewardship context' below). To do this we employed a purposive snowball sampling approach.[40] Participants were recruited at workshops and conferences, and by email and telephone. Barendse et al.'s[8] list of stewardship initiatives provided a useful benchmark for sample completeness.

The survey questionnaire was fully structured and included 27 questions, both open- and closed-ended questions[39] (see Appendix 1 in the supplementary material). The survey was divided into three parts: (1) the context of the participants' project or initiative; (2) what environmental stewardship meant to them (open-ended questions); and (3) environmental stewardship practices in their projects. The following questions were used to generate insights on 'stewardship practices': (1) What kind of approach or model is employed in your project? (2) What is the primary objective of your project? (3) What kind of stewardship actions are expected from stewards? We use these categories to structure the results section on stewardship practice.

To increase the response rate, we administered the survey through a variety of avenues[39] including survey interviews (in person or telephonically) and self-administered survey questionnaires (hand written and web-based, using Google Forms). To reduce potential variability across means of administration, an identical form was used across all media. We piloted the survey questionnaire with five practitioners and refined the questions based on this experience. The survey ran for 11 months from August 2015 until June 2016; 95 practitioners from across South Africa participated.

Data analysis

We analysed the quantitative data using descriptive statistics.[39] We coded qualitative data from open-ended questions using inductive, open coding through a two-step coding process.[41] The first step was to identify themes of similar responses per question from the data, resulting in a long list of themes (about 15–20 per question). In the second step, we narrowed this list of themes down to a shorter list of overarching categories based on similarity in meaning.[42] We labelled the categories as much as possible using 'in vivo' codes (i.e. using respondents' wording) to stay true to the meanings expressed in responses.[41] For most questions, we also quantified the number of responses per category coded from qualitative data.

We coded the practical application of the concept of 'social-ecological stewardship' in the initiatives (Objective 3) out of the qualitative data according to a pre-determined coding framework, using the following three criteria[23]: The initiative had to: (1) be working at landscape-level (i.e. beyond the individual farm or village level); (2) be working towards multifunctionality, i.e. towards multiple, integrated social-ecological stewardship outcomes; and (3) have an explicit focus on collaboration among multiple stakeholders and stewards (or farmers) must be active participants in a collaborative multi-stakeholder process. These criteria characterise initiatives which are putting the concept of social-ecological stewardship into practice in landscapes.[23]

Respondents' answers to the question about what kind of stewardship actions they expected from stewards generated a large number and variety of responses, and we therefore treated them as free-list data.[43] We quantified the 'stewardship actions' data by counting the frequency of mention of each action across all respondents. We used word frequency counting (a form of content analysis[44]) on the textual survey data (full data set) to identify and quantify instances of key terms from the recent theoretical stewardship literature (drawing on the principles of ecosystem stewardship described above[21]). To avoid reductionist interpretations of counts, we interpreted these in the context of their usage, by analysing them together with the qualitative results.[44]

Ethical considerations

We adhered to the guidelines of the Rhodes University Ethical Standards Committee Handbook[45] which include the following key principles: respect and dignity of research participants (including obtaining free and informed consent and ensuring anonymity); transparency and honesty in all aspects of research; accountability and responsibility of researchers; and integrity and academic professionalism of researchers. Research feedback was provided to participants via email, in a magazine article[46], and through presentations at relevant events. The study was given ethical clearance by the Department of Environmental Science Ethics Sub-committee in August 2015.

Results

Respondents' stewardship context

Participants represented all nine provinces of South Africa and worked in a variety of organisations. The largest proportion of respondents (44%) worked for national non-governmental organisations (NGOs). The next biggest group worked for provincial government agencies (23%), followed by local NGOs (14%), private sector organisations (8%), national government (4%), research institutes (4%), and local government (2%). Considering the importance of the biodiversity stewardship tool in South Africa[8], we also categorised participants by their involvement with this approach: 33% worked solely with the biodiversity stewardship tool, 27% combined it with other approaches, and 40% exclusively used other approaches. We also asked participants whether they would characterise the work or purpose of their project as 'stewardship': 82% said 'Yes', 16% said 'Maybe or Partly', and 2% said 'No', confirming that a large proportion of the sample self-identify as stewardship practitioners.

Table 1: Practitioner understandings of the meaning of stewardship ($n=95$)

Meaning	Frequency	Explanation	Illustrative quote
Responsible use and care	42%	The steward needs to use and care for nature or natural resources in a responsible manner, taking an inter-generational approach.	'Responsible use of natural resources for the benefit of current and future generations.'
Stewardship = Biodiversity stewardship	20%	The term 'stewardship' is considered to mean the same as the term 'biodiversity stewardship' (i.e. the two are conflated) (see Table 1).	'Private land owners signing their properties into a conservation protection class and managing this land for the benefits of biodiversity.'
Sustainable use and management	20%	Use and management of nature and natural resources whilst implementing the principles of sustainability, i.e. balancing social, economic and ecological needs.	'Looking after or managing your natural resources in a sustainable manner – protecting and improving natural resources while you produce.'
Preserving and conserving	11%	The role of the steward is to conserve and protect nature and natural resources from human impacts, taking an inter-generational approach.	'Landowners and beneficiaries safeguarding the land, its ecosystem services for now and future generations, sustainably.'
Ethical or moral imperative	5%	This meaning focuses on the ethical or moral implications of stewardship: the role of the steward is to take care of nature and natural resources because of an ethical or moral duty, for the greater good.	'Stewardship is an ethic that embodies the responsible planning and management of resources.'
Holism and human–nature connectedness	2%	In this meaning of stewardship, the interconnectedness of humans and nature is emphasised. Stewardship is a human response to recognising this interconnectedness and acting in a certain manner because of it.	'…it is important not to view humans as separate from the landscape … but stewardship implies a responsibility on humans to take care of the life that supports us.'

Meanings of stewardship in practice

Practitioners held diverse understandings of the meaning of stewardship, yet these coalesced around the ideas of 'taking care of nature' and 'stewards performing a balancing act between protecting nature and supporting their own agricultural livelihoods' (Table 1). Just under half of the respondents understood stewardship to mean 'responsible use and care'; for example, stewardship is the 'responsible use of natural resources for the benefit of current and future generations'. A total of 20% of respondents conflated stewardship in general with the biodiversity stewardship tool specifically (Table 1: 'Stewardship = Biodiversity stewardship'). For example, one respondent expressed confusion regarding what they understood about the term:

> *…for me the word 'stewardship' is confusing due to what the word actually means and what is happening in reality. For me the word means taking responsibility for managing one's own natural resources. In reality it seems more like a process to extend protected areas status onto private lands.*

Another 20% of respondents described stewardship as 'sustainable use and management' (Table 1), for example: 'Looking after or managing your natural resources in a sustainable manner – protecting and improving natural resources while you produce'. This meaning is distinguished from 'responsible use and care' by its explicit use of the term 'sustainability' (Table 1). The remaining 18% of respondents' understandings of stewardship included notions of 'preserving and conserving nature', an 'ethical or moral imperative', and 'holism and human-nature connectedness'.

The different terms used by respondents to define stewardship and describe how they put it into practice also give insight into what stewardship means to them, and what discourse is dominant in stewardship practice. For example, the terms 'conservation', 'environment' and 'biodiversity' were the three most frequently used terms in definitions given by participants and also in the entire data set (Table 2). Terms from the more recent literature on stewardship in social-ecological systems such as 'ecosystem services', 'resilience' and 'social-ecological systems' were used far less frequently by respondents in their answers (Table 2).

Table 2: Word frequency counts from the responses of stewardship practitioners of key terms in the recent stewardship literature (aligned with '21st Century' and 'Contemporary' stewardship literature and understandings described in Figure 1)

Term from the literature (or root of term)	Overall frequency† in data set	Respondent frequency‡ in overall data set	Respondent frequency‡ in 'meaning of stewardship' responses
conserv- (conserve, conservation, conservancy)	434	84	30
environment- (environment, environmental, environmentally)	359	87	20
biodiverse- (biodiverse, biodiversity)	321	80	25
sustain- (sustain, sustainable, sustainability)	159	56	13
ecosystem (excluding ecosystem services)	85	41	4
ecosystem services	32	19	6
resilien- (resilient, resilience)	13	13	0
social-ecological, socio-ecological	8	4	1

†*'Overall frequency' = how many times the item was mentioned throughout the data set*

‡*'Respondent frequency' = the number of respondents who mentioned the item (n=95)*

Practice of stewardship

Stewardship approach

A diversity of approaches to facilitating and implementing stewardship are being practised in South Africa (Table 3), with similar approaches, objectives and activities as described for stewardship initiatives worldwide

(see Introduction). The most dominant approach is the biodiversity stewardship tool; however, a similar proportion of respondents are involved either in approaches which combine biodiversity stewardship with other approaches, or in integrated landscape or catchment approaches to stewardship. Overall, 60% of respondents are involved to a greater or lesser extent in implementation of the biodiversity stewardship tool (Table 3). The combination of the biodiversity stewardship tool with other approaches indicates its applicability in a variety of contexts, beyond the narrow focus of achieving biodiversity conservation targets. Practitioners are integrating this tool within broader sustainable land management initiatives. For example:

> *My project is quite varied with a habitat rehabilitation aspect, a more scientific based monitoring aspect and then a stewardship aspect. The monitoring functions to track the progress of rehabilitation work and to identify new threats that need to be addressed and biodiversity stewardship is used as a tool to secure high priority habitats for conservation.*

The combined use of the biodiversity stewardship tool with other approaches (often those focused on sustainable utilisation or production) (Table 3) also illustrates that for many practitioners, stewardship is about balancing protection and use of multiple ecosystem services. For example, balancing the protection and management of biodiversity, or regulating and supporting ecosystem services such as water, with the production-oriented use of land for commercial or subsistence agriculture, livestock grazing or other natural resources (provisioning ecosystem services). Seeking to strike the balance can bring sectors into conflict with one another but can also lead to new partnerships. For example, one respondent commented that:

> *For stewardship to work it is important that we are able to 'align with our enemies' e.g. I am working for a conservation agency, but I sit in the agriculture office.*

The characterisation of stewardship practice according to these different approaches (Table 3) reveals that sectoral focus areas seem to drive approaches to stewardship. The biodiversity conservation sector currently dominates stewardship practice through the biodiversity stewardship tool; however, catchment management and sustainable land management, which are represented for example by the Departments of Water, Agriculture and Land Affairs/Rural Development, are also important sectors for stewardship.

Objectives of stewardship

Despite focused biodiversity stewardship approaches only accounting for 33% of the sample (Table 3), biodiversity conservation was the primary objective identified most frequently by respondents (57%, Figure 2). Ecological objectives were by far the most cited primary objective, followed by sustainable agriculture and catchment management (Figure 2).

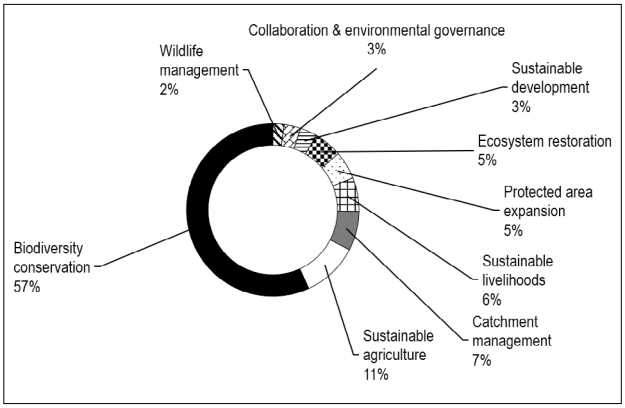

Figure 2: Primary objectives of stewardship initiatives (n=95).

The quotes below illustrate some of the more multifaceted objectives expressed by many respondents, illustrating that practitioners are working with farmers towards balancing the needs of production activities

Table 3: Stewardship approaches or models applied in respondents' projects (n=95)

Approach	Frequency	Description
Biodiversity stewardship tool	33%	'Biodiversity stewardship is an approach to securing land in biodiversity priority areas through entering into agreements with private and communal landowners, led by conservation authorities…The objective of Biodiversity Stewardship is to conserve and manage biodiversity priority areas through voluntary agreements with landowners.'[7] This tool is driven by policy and legislation in South Africa and is one of the means by which the country seeks to reach its protected area expansion targets. It is also considered a form of Private Land Conservation.[19]
Biodiversity stewardship tool combined with other approaches	27%	Practitioners often combine the biodiversity stewardship tool with other approaches, for example, they will work with landowners to declare a portion of their land as a Protected Environment or as a Nature Reserve, whilst also supporting farmers in the implementation of agricultural 'Better Management Practices' (BMPs) on the cultivated areas of their farms.
Integrated landscape and catchment approaches	26%	These are initiatives which often operate at levels above the individual farm or village, take an integrated approach to land management by working towards multiple objectives, and focus on stakeholder collaboration as a key process in their work.[34,35] The project goals are usually broader than, for example, only biodiversity conservation or only sustainable agriculture, and consider the land-based livelihoods occurring in the landscape in an integrated way. These initiatives often have a catchment approach which recognises the important ecosystem services related to water production. Biosphere Reserves (UNESCO Man and the Biosphere Programme) are an example of a landscape-level approach.[52]
Sustainable production or utilisation	9%	Initiatives which focus on sustainable production or utilisation are usually focused on the agricultural production activities occurring on the land. The starting point is to support the economically and ecologically sustainable use of land-based resources for agricultural production. This use includes commercial agricultural production and subsistence farming or grazing on communal rangelands. These initiatives focus on balancing the economic needs of stewards with long-term ecological functioning of the land. They are often implemented through development of guidelines for agricultural BMPs, and may be linked to market-based incentives to secure premium markets or prices for agricultural products which are adhering to such sustainable use guidelines. These sometimes incorporate short-term contractual agreements with farmers to ensure compliance to management guidelines or BMPs, which may make provision for financial incentives or compensation through schemes such as payments for ecosystem services.
Other environmental stewardship approaches	5%	This is a small category of initiatives which do not fit into the above four types. It includes, for example: local initiatives around water stewardship with citizen scientists; local volunteer-driven biodiversity monitoring initiatives; or alien plant clearing initiatives which are not part of a broader stewardship project like the ones described above.

(or provisioning ecosystem services), with management and protection of regulating or supporting ecosystem services in the landscape:

> *Sustainable land use, continual provision of ecosystem services, biodiversity conservation, ecosystem-based adaptation, improved access to markets for produce.*
>
> *Ensuring an ecologically functional environment where people can farm, live and thrive happily alongside biodiversity assets for multiple generations.*

Stewardship actions expected from stewards

The stewardship actions expected from stewards (Figure 3) align with the primary objectives identified by practitioners (Figure 2), confirming that stewardship practice in South Africa is primarily about engaging with ecological concerns. The most frequently expressed categories of stewardship actions focus on dealing with ecological aspects such as species, ecosystems, habitats, natural resources and biodiversity (Figure 3). However, several categories also illustrate the role of stewardship as balancing both ecological protection or management (e.g. for regulating and supporting ecosystem services), and production or livelihood outcomes (e.g. for provisioning ecosystem services). This role is reflected in statements such as: 'utilise resources sustainably' and 'implement agricultural best management practices'. Actions relating to social learning and collaborative processes were also mentioned, including 'participate in knowledge-sharing and education', 'participate in research and monitoring' and 'participate in collaborative initiatives', although these were reported far less frequently (Figure 3).

Evidence of 'social-ecological stewardship' in practice

Further insights into the nature of stewardship practice and the alignment of initiatives with the most recent meanings of stewardship in theory (i.e. social-ecological stewardship) are revealed through the following key features: 65% of initiatives operate at landscape-level and therefore involve multiple stakeholders; 47% of initiatives are working towards multiple, integrated social-ecological outcomes; and 67% of initiatives have an explicit focus on building collaboration among stakeholders. Of the initiatives, 41% showed all three of these features of social-ecological stewardship, suggesting that, in many initiatives, putting stewardship into practice is about more than simply working towards ecological objectives (Figure 2) and implementing ecological management actions (Figure 3).

Although 60% of initiatives are implementing the biodiversity stewardship tool (33% solely, and 27% in combination with other approaches (Table 3), our findings show that in many cases the tool is being implemented within a more integrated overall approach in which biodiversity conservation is one of many potential outcomes of improved stewardship.

We also investigated whether any initiatives were explicitly applying the resilience-based principles of ecosystem stewardship.[2,21] In defining the meaning of stewardship, none of the respondents used the term 'resilience', only 6 of 95 respondents mentioned the term 'ecosystem services' in their definition of stewardship (Table 2), and the term 'social-ecological' was used only a total of eight times (Table 2). These three terms are core to the principles of ecosystem stewardship described in the introduction. In contrast, the word root 'sustain-' (i.e. sustain, sustainable, sustainability) was used by 13 respondents in their definitions of stewardship and was mentioned overall in the full data set by 56 respondents (Table 2). The lack of uptake by practitioners of the most recent jargon from the stewardship literature is not surprising, especially considering that these are also recent concepts in the literature, and that there is a well-known gap between theory and practice in this field. What is striking, however, is that when one looks beyond the language, meanings and discourse to the actual practice of stewardship, there is evidence of social-ecological stewardship, as described above.

Discussion

Our study provides insights into the practice of stewardship in South Africa, revealing how local practitioners are working towards achieving stewardship outcomes on the ground, thus shedding light on the links between theory and practice. We begin by discussing concerns and opportunities raised by the prevalence of the biodiversity stewardship tool in the practice of stewardship in South Africa. We then turn to two new perspectives on stewardship in practice revealed through this study. Firstly, the findings on the meanings and practice reveal insights into the contemporary role of local stewards working in multifunctional landscapes, where they are expected to care and share. Secondly, despite the dominance of the biodiversity stewardship tool in South Africa, the practice of stewardship appears to be shifting to align with the most recent social-ecological understandings of stewardship in the literature – practitioners may not be 'talking the walk' (aligned with stewardship theory), but they do seem to be 'walking the walk' (putting stewardship into practice).

Concerns and opportunities for stewardship practice

There are concerns about the dominance of stewardship practice by one sector through the biodiversity stewardship tool. The prevalence of biodiversity stewardship is perhaps to be expected given the institutionalisation of the approach in South African policy[8], and its relative success within the conservation sector[6,47]. This institutionalisation

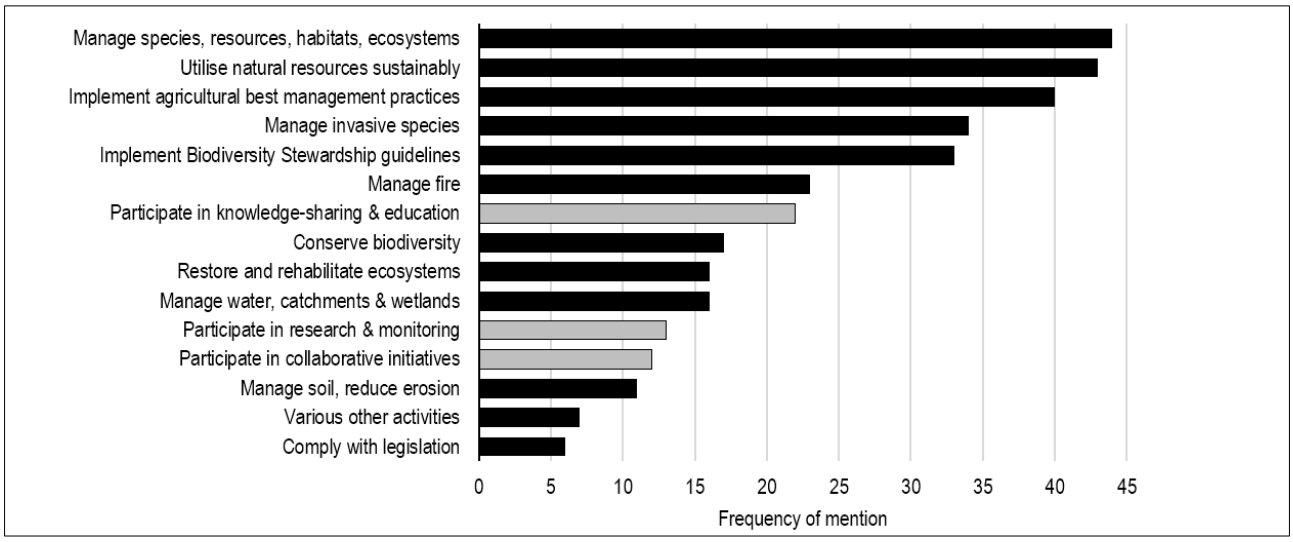

Figure 3: Stewardship actions which practitioners expect stewards to implement. Black bars indicate stewardship actions focused on ecological outcomes; grey bars indicate stewardship actions related to social outcomes (n=95).

demonstrates that both local and global policy play a strong role in shaping the understanding, discourse and practice of stewardship in South Africa – possibly more so than global theory (Figure 1) and practice. For example, the Protected Areas Expansion Strategy from which the biodiversity stewardship tool emerged, is a response to South Africa's commitments for protected area expansion to the international Convention on Biodiversity.[48]

The strong focus of biodiversity stewardship on conservation outcomes may hinder opportunities for other diverse forms of stewardship (Figure 1), and the narrow focus on 'high-value' biodiversity priority areas within the biodiversity stewardship approach means large areas of the country are excluded from the potential positive impacts of stewardship.[8] Possibly in response to such concerns, some national NGOs in South Africa have adopted more holistic and integrated interpretations of stewardship[8] aligned with the notion of social-ecological stewardship or 'Earth Stewardship'[1]. This adoption indicates recognition among the practitioner community that more integrated, holistic approaches to stewardship may be more suitable to addressing the complex social-ecological challenges faced in South Africa.

Another concern relates to associations between biodiversity stewardship and the problematic history of biodiversity conservation in the country. Because of its strong ties with biodiversity conservation in South Africa, there is a risk that stewardship is associated with the social injustices which were historically enacted in the interests of conservation.[49] Tellingly, a respondent in our survey commented that 'there is a perception that stewardship is for rich white people'. Policymakers and practitioners of biodiversity stewardship in South Africa would do well to continue working on ensuring that implementation of the biodiversity stewardship tool in no way infringes on local people's voice, rights to equal access of benefits of ecosystem services, and other social justice concerns. This consideration is especially relevant considering critique in the literature about the concept of stewardship and its historical association with paradigms that have perpetuated exclusive religious and chauvinist ways of engaging with nature.[14,15,17] Moreover, recent debates in South Africa around land reform and expropriation without compensation[50] and resulting land tenure uncertainty among private landowners, raise important questions about the long-term sustainability of the current model of biodiversity stewardship as the primary tool for conservation outside of state-owned protected areas. The conservation community needs to earnestly engage in the realities of land redistribution. Stewardship policies and practices need to be agile and flexible enough to accommodate changing land tenure arrangements.

The strong position of biodiversity stewardship is also positive in many ways. Certainly, within the conservation sector in South Africa, this approach is considered a success story for biodiversity conservation and protected area expansion.[6,47] It is viewed as a cost-effective tool for securing protected areas on non-state land, and is considered a valuable means of securing commitment and investment from private and communal land users into long-term stewardship.[6] Through binding contractual agreements with landowners, practitioners can also potentially secure fiscal benefits for farmers (for example through tax rebates), supporting stewards to off-set the costs of voluntary stewardship actions on their land.[51] There is also recognition that integrating the biodiversity stewardship tool with other approaches to sustainable natural resource management could help South Africa to work towards its National Development Plan and the Sustainable Development Goals.[19,47] Examples of these include the integrated landscape-level initiatives identified here, but also market-based incentive schemes, and rural development and environmental education initiatives, which were not identified in our findings but have been recognised as important forms of stewardship.[8]

There is an opportunity to leverage the effectiveness and success of the biodiversity stewardship tool to achieve more integrated outcomes[47], as practitioners are already beginning to do (Table 3). To successfully implement the ideals of stewardship informed by a social-ecological view, a cross-sectoral policy framework which supports or mandates cooperative governance and creates an enabling environment for multistakeholder collaboration is necessary. Existing landscape-level stewardship initiatives such as, for example, the Man and the Biosphere Reserve Programme and Catchment Management Forums, are promising candidates for such a framework, and require more support to realise their potential in South Africa[52].

In practice, stewards are expected to care and share

Our findings on the meanings of stewardship in practice reported here clarify what kind of role local stewards are expected to play by practitioners. Despite a diversity of understandings of stewardship in practice which mirror to some extent the diversity in understandings represented in the theory[38] (Figure 1), the meanings attached to stewardship coalesce around two core themes: (1) 'responsible use and care of nature and natural resources' and (2) the idea of 'stewardship as a balancing act' between utilisation of natural resources for agricultural production and protection of nature (Table 1). Therefore, according to practitioners, the role of the steward is to use natural resources responsibly and carefully by balancing the use of natural resources for their own agricultural production needs and objectives (e.g. crop or livestock production) with a responsibility to manage and protect natural resources for the good of the ecosystem, and for the greater good of society. This aligns with the more classical definition of stewardship proposed by Welchman[14], and with the sustainability-informed conceptualisations of stewardship in theory (Figure 1). Furthermore, in the literature 'care' has been identified as a fundamental concept underpinning many diverse stewardship understandings, and our findings from practitioners support this relationship.[16,38]

Although practitioners in this research did not mention the concept of ecosystem services much (despite its prominence in the literature on ecosystem stewardship[21]), interpreting the role of the steward through the lens of ecosystem services reveals an interesting feature of their role. The role of stewards could hence be re-formulated as: *to interact with ecosystems responsibly and carefully by balancing the use of provisioning ecosystem services for their own direct needs, with the societal and ecological needs of a broader, more diverse suite of ecosystem services, such as regulating, supporting, and spiritual and cultural ecosystem services*. This means that they are in effect stewards of the multifunctionality of the landscape and are expected to act as stewards of an interlinked social-ecological system, reinforcing the notion of stewardship as a relational concept.[16] Consequently, stewardship, even at the individual farmer level, is about balancing or managing trade-offs among multiple types of ecosystem services.[53] If a steward is to be responsible in their interactions with nature and to take care, then they have an obligation to collaborate with others, i.e. to share, across the landscape, to negotiate ecosystem services trade-offs.[54] A competent steward is expected to care, and to share. Collaboration therefore becomes an imperative of stewardship practice[23], and a relational approach to understanding and practising stewardship is necessary[16].

In seeking to achieve the 'balancing act' of the benefits of diverse ecosystem services from multifunctional landscapes, stewardship initiatives hold the potential to address the long-standing conflicts between agriculture and conservation.[55] According to the practitioners in our study, successful stewards are expected to be able to manage species, habitats and ecosystems, whilst also utilising ecosystem services sustainably (Figure 3). Managing this balance is similar to the role expected of stewards in other countries, for example in the Australian Land Care programmes[25,31] and in agri-environmental schemes in Britain and Europe[30]. Land-use conflicts between agriculture and conservation are of increasing concern[56], and approaches like stewardship, which seek to address conservation, agricultural and social concerns on a single piece of land – or even at landscape-level – are necessary[57]. Given that most stewards (at least in South Africa) are practising stewardship in a voluntary capacity with minimal or no financial incentives or subsidies (which are provided elsewhere, for example, through agri-environmental schemes in Europe[58]), these would be high expectations. Incentivising policies and funding mechanisms, as well as platforms for collaboration and negotiation, which create enabling conditions for stewards to fulfil this important role in society, are needed. At present, different land uses, or beneficiaries of different types of ecosystem services, are represented by different, often competing, sectors (e.g. water vs conservation vs

agriculture) which brings them into conflict with one another and makes it difficult for stewards to become competent in this important role.

Practitioners 'walking the walk, not talking the talk'

Many stewardship initiatives in South Africa conform to some extent to the contemporary theoretical ideas of social-ecological stewardship (Table 3), confirming that this is being applied in practice. Whilst the meanings of stewardship (Table 1) and the language used by practitioners (Table 2) align with less recent understandings of stewardship in the literature (Figure 1), the practice is shifting towards more integrated approaches. This seems to indicate that the language and discourse may in fact be obscuring the more contemporary and innovative practice, i.e. that practitioners are 'walking the walk', even if they are not 'talking the talk'. Although these social-ecological stewardship practices are similar to many approaches elsewhere in the world (see description of global stewardship practice in the Introduction), we consider their emergence in the South African context to be an institutional and practical innovation in the face of traditionally siloed approaches to conservation and natural resource management.[8] Practitioners appear to be responding to the complex challenges they face in multifunctional landscapes by implementing more integrated, social-ecological stewardship initiatives.

The practice of social-ecological stewardship in South Africa signals an opening for greater dialogue between practice and theory, to counter the usual underlying assumption that theory should inform practice.[59] For example, whilst stewardship practitioners may not have adopted the most recent language of stewardship theory in their discourse, they are putting social-ecological stewardship into practice, as concluded by Barendse et al.[8] Practice-based environmental knowledge is gaining increasing recognition[60], and researchers in the social-ecological systems field are calling for place-based research and comparative case studies of local stewardship initiatives[23,61]. South African stewardship practice is therefore an opportunity to conduct this kind of grounded research, whereby practice can inform theory.

Conclusion

Practitioners' understandings of the meaning of stewardship vary, mirroring to some extent the diversity of understandings prevalent in stewardship theory. However, the themes of responsibility, care for nature and balancing multiple demands on ecosystems were common threads. Hence, the primary role of the steward is to interact with ecosystems responsibly and carefully by balancing the use of provisioning ecosystem services for their own direct needs, with the societal and ecological needs of a broader, more diverse suite of ecosystem services. In the context of multifunctional landscapes, stewards therefore have an obligation to collaborate with other stakeholders across the landscape to negotiate trade-offs around a diverse suite of ecosystem services. Recognising collaboration as a key process for stewardship highlights that stewardship is fundamentally a relational concept. Investigating the stewards' perspective on their role and responsibilities would be valuable follow-up research, as they are likely to experience challenges in this balancing act, and in working collaboratively with others across landscapes.

The policy-driven biodiversity stewardship tool is a prevalent feature of stewardship practice in South Africa, and many practitioners are integrating this tool with other approaches. Practitioners' understandings of stewardship are strongly influenced by the sustainability discourse, and there is limited evidence in the language of practitioners of the most recent conceptualisations of stewardship in the social-ecological systems literature. However, despite this slow uptake of the recent theory, there is evidence of social-ecological stewardship emerging in practice. Practitioners' use of more classic stewardship language to talk about their work appears to be masking more innovative, contemporary practice which is responding to complex, multifaceted realities on the ground. These innovative social-ecological stewardship initiatives work at landscape-level and work towards integrated social and ecological stewardship outcomes by facilitating collaboration among diverse stakeholders. Innovative policy mechanisms and further research are needed to support these integrated, collaborative cross-sectoral initiatives.

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Authors' contributions

All four authors jointly conceptualised and developed the methodology for the study. J.C. was the lead researcher of the study, collected and analysed the data and wrote the initial draft of the article. G.C., S.S. and M.R. assisted with data analysis and revisions of the written draft. Significant conceptual and editorial input into writing of the article was provided by G.C. and S.S. G.C., S.S. and M.R. supervised the research as part of J.C.'s PhD research. G.C., S.S. and M.R. assisted in acquiring funding to support the study.

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Appendix 1: Stewardship Survey for Practitioners

Note: Please sign the "Research Ethics and Informed Consent for Stewardship Survey" (separate document).

I am using the word **stewardship** here in a broad sense in terms of the environment i.e. think 'environmental stewardship'

Please answer all the questions honestly and express your own opinion, based on your personal experience of working in stewardship projects. Please write your answers into the blue-shaded cells.

Date:	Role:
Name of	Project name:
Organisation:	Project location:

Suggestions for other projects/practitioners to interview (especially landscape-scale)

Part A: Environmental stewardship in your project

A1. Would you characterise the work or purpose of your project as 'stewardship'?	Yes:		No:	
A2. Why? Or: Why not?				
A3. What do you understand stewardship to be?				
A4. What kind of activities would someone be involved in if they were practicing stewardship?				
A5. What are the main outcomes of the stewardship project you're involved in?				
A6. Is this a landscape-scale initiative? i.e. does it require multiple land users to collaborate with one another? (Mark with 'X')	Yes:		No:	
A7. Is there a collaborative platform in place for multiple stakeholders in the landscape to engage? (Mark with 'X')	Yes:		No:	
A8. Who is collaborating?				
A9. Which agricultural land tenure context does the project represent: Communal or Private? (Mark with 'X')			Pvt:	

A10. Which type of stewardship is best aligned with the work of your project? Select two and mark with 'X'

	Env.		Env-Lscape		Biodiv		Agric		Water

Part B: The meaning of environmental stewardship

B1. Who is/should be a steward?

B2. What is the goal/purpose of stewardship?

B3. Stewardship is often referred to as a 'management activity'- what is being managed

B4. Who/what are the beneficiaries of stewardship? i.e. stewardship is for the sake of….

B5. To whom/what should stewards be accountable?

B6. Who should bear the costs of stewardship?

B7. Do the participants in your projects have a stewardship ethic? (Mark Yes: No:

B8. How do you know?

B9. Is this ethic important in driving stewardship actions? Yes: No:

Why?

B10. I s the concept of stewardship useful in your work? Yes: No:

Why?

B11. If you didn't/don't use the word 'stewardship' in your work, what alternative would you use?

Part C: Enablers and barriers of environmental stewardship

C1. What drove or motivated you to start/join this stewardship project?

C2. In your experience, what are the biggest *barriers* to stewardship? (Please list at least 3 in order of importance)

i.

ii.

iii.

C3. What are the biggest *enablers* of stewardship? (please list at least 3 in order of importance)

i.

ii.

iii.

C4. What are the particular challenges of facilitating stewardship at landscape scale?

C5. What role do you feel that the Department of Environmental Affairs Natural Resource Management or 'Working for…' programmes play in enabling stewardship?
C6. What changes could be made to these NRM programmes in order for them to be *better enablers* of stewardship?
EXTRA NOTES OR COMMENTS **THANK YOU VERY MUCH! Please return this completed questionnaire form to:*[researcher email address]***