# Chapter 21:
# Improving the legal protection of strategic water source areas: a South African perspective

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## 1 Introduction

South Africa is a water scarce country with an average annual rainfall of 490 mm per annum – half that of the world's annual rainfall.[1] The need to secure South Africa's water supply for current and future generations is a grave concern and challenge. Heeding this concern, the government revised the country's water legislation and introduced the National Water Act[2] (NWA) in 1998. The NWA contains comprehensive provisions governing, among other things, water management strategies, water management institutions, measures to protect water resources generally and the use of water.[3] It is complemented by the Water Services Act[4] that governs the provision of water services to the population through various water service institutions.[5]

Notwithstanding the introduction of the above legislation specifically designed to deal with water management and provision in a water scarce country, South Africa's water security is perilous. The country is experiencing its worst drought in the past 30 years. In order to manage this, the government has taken measures to declare eight of the country's nine provinces as drought disaster zones in the past few years under the Disaster Management Act.[6] More recently, it has declared a national drought disaster throughout the country due to ongoing droughts.[7] This has triggered debates about whether South Africa is adequately equipped to deal effectively with the current and

1 WWF-SA (2013: 29).
2 Act 36 of 1998.
3 For a comprehensive explanation of water law, see generally: Glazewski (2014); and Thompson (2006).
4 Act 108 of 1997.
5 Section 1 of the Water Services Act: This means a water services authority (a district or local municipality), a water services provider, a water board and a water services committee.
6 Act 57 of 2002.
7 *Government Gazette* 41439 GN 107 of 13 February 2018. Some provinces have gone a step further to restrict water use from certain dams in terms of the NWA in order to deal with the disaster locally and introduce stringent water restrictions on users. The Western Cape, for example, placed this restriction on one of its water supply schemes in terms of *Government Gazette* 40279 GN 1057 of 16 September 2016.



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future droughts? These debates have raised questions concerning the ability of the country's current water regime to conserve and manage scarce water resources and the capacity of its institutions to implement it. Are there certain water management mechanisms or approaches which could be introduced to improve the country's water security? If so, what are these mechanisms and approaches and how can they be implemented? Do they require new legislation, or can they be implemented through existing legislation?

South Africa's water regime historically focused on supply management before moving into more contemporary times to focus on demand management. One particular mechanism or approach that seems to have been somewhat overlooked is area-based management adopted in other water-scarce countries to manage, conserve and protect areas globally known as 'water towers',[8] better known in South Africa as strategic water source areas (SWSAs). This term specifically denotes a link to a geographical area containing the very ecological infrastructure from whence the water originates, but cleverly uses the word 'strategic' to imply that it is not an exhaustive identification of all water source areas.[9]

The identification of SWSAs began in 1959 when South Africa's principal mountain catchment areas were identified and mapped by the Soil Conservation Board.[10] From this knowledge came the study and development of national climate and hydrological spatial databases (based on mean annual runoff) that were used in preparing the National Spatial Biodiversity Assessment (2004).[11] Due to their limitations, the National Freshwater Ecosystem Priority Areas (NFEPA) Project (2011) set to build on existing knowledge and identified 'high water yield areas' – areas which produced up to three times higher than the mean annual runoff.[12] The NFEPA Project was a multi-partner collaborative project between various government departments, their technical advisors, scientists and non-governmental organisations.[13] Through recent refinement and scientific adjustments to that knowledge, South Africa's 22 SWSAs were identified as part of a collaborative project between the Council for Scientific and Industrial Research (CSIR) and the World Wide Fund for Nature-South Africa (WWF-SA).[14]

Described as the 'crown jewels' of South Africa's water resources, SWSAs comprise only 8% of the country's landscape, yet provide more than 50% of its surface water. [15] These areas are undeniably crucial as they mark the first part of the 'journey of water'. Once vast amounts of rain waters are caught, SWSAs distribute them

8 WWF-SA (2013: 8).
9 Nel et al. (2017: 252).
10 This process has led to the identification of 109 mountain catchment areas, cf. WWF-SA (2013: 9).
11 WWF-SA (2013: 9).
12 Ibid.
13 Nel et al. (2011: v).
14 Nel et al. (2017: 253 and 255).
15 Ibid: 255; and WWF-SA (2013: 6).



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through rivers, streams and other watercourses into the country's dams. From there, water is transported through engineered infrastructure and distributed for domestic, industrial and agricultural use through the country's extensive national, provincial and municipal water reticulation system. Although located in only six of the country's nine provinces, most of South Africa's SWSAs provide water nationally, supporting growth and development needs that are often a far distance away. Research conducted by the CSIR indicates that SWSAs support about 50% of the population, 64% of the economy and about 70% of irrigated agriculture.[16] Their invaluable ecological function therefore qualifies them as being 'strategic' and rightfully worthy of a customised and dedicated legal regime to manage, conserve and protect them.

At this juncture, it is crucial to distinguish SWSAs from the more commonly known water management areas (WMAs). WMAs are "established as a management unit in the national water resource strategy within which a catchment management agency (CMA) will conduct the protection, use, development, conservation, management and control of water resources".[17] There are currently nine WMAs which have been identified[18] in South Africa which span the entire landscape of the country. Being regional management units which do not provide water nationally or support the country's population and economy significantly, they are distinguishable from SWSAs which are far smaller pockets of land found within (and sometimes straddling numerous) WMAs.

Currently, there are 22 SWAs in the country. The South African government has also "endorsed and acknowledged [SWSAs] as strategic national assets at the highest level in all sectors" by way of policy, particularly in the context of water resource protection.[19] It is disconcertingly anomalous that the NWA, being the country's main freshwater management legislation, contains no express measures specifically designed to manage, conserve and protect this crucial ecological infrastructure is disconcerting and anomalous. Adding to this confusion is the fact that area-based approaches to freshwater management are not a new legal phenomena. In the 1970s, the country introduced the Mountain Catchment Areas Act[20] (MCAA) which enabled the government to declare mountain catchment areas and subject them to various forms of control and regulation. This Act is now exceptionally outdated, and rather fortuitously, in the absence of a contemporary mechanism contained in the NWA, approximately 13% of the country's SWSAs are situated within protected areas[21] declared under the National

16 Nel et al. (2017: 255).
17 Section 1 of the NWA.
18 *Government Gazette* 40279 GN 1056 of 16 September 2016. The Minister recently announced a proposal for the establishment of a single catchment management agency (*Government Gazette* 41321 GN 1415 of 15 December 2017). This is in direct opposition to existing national water policy that provide for decentralisation and public participation in water governance.
19 Department of Water Affairs (2013: 44).
20 Act 63 of 1970.
21 For a breakdown of the percentage of protection for each SWSA, see Nel et al. (2017: 256).



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Environmental Management: Protected Areas Act[22] (NEMPAA). This, however, leaves by far the majority of the country's crucial SWSAs outside of formal legal area-based protection. These 'unprotected' SWSAs face a range of threats from coal mining, the plantation of alien and invasive species within and around them, and land degradation caused by poorly managed farming practices.[23] Even though some threats, like mining, might appear minimal at a national scale, studies show that the extent of the threat posed by mining activities to SWAs on a provincial scale is vast.[24] The need for more concerted efforts to improve the protection of South Africa's SWSAs is a clear priority.

This chapter begins by briefly outlining South Africa's current environmental regime with a view to identifying possible area-based management measures that could be used to fill the current apparent regulatory vacuum when it comes to managing, conserving and protecting the country's SWSAs. This survey spans South Africa's framework environmental law (the National Environmental Management Act[25] (NEMA)); freshwater management laws (NWA and MCAA); protected areas laws (the NEMPAA); forestry and biodiversity laws (the National Forests Act[26] (NFA)) and National Environmental Management Biodiversity Act[27] (NEMBA)); and mineral resource laws (the Mineral and Petroleum Resource Development Act[28] (MPRDA)). In respect of each of these laws, the author canvasses the possibly relevant existing legal provisions and then critically reviews their utility. It must be highlighted at the outset that this survey is expressly limited to the framework environmental management laws and natural resources laws, focussing on those tools promoting area-based management for conserving surface water in the country's identified SWSAs. The scope of this chapter unfortunately does not provide an opportunity to include a discussion of other potentially relevant laws within its remit, such as those governing land-use planning.

Having outlined and critically reviewed the legal possibilities inherent within South Africa's current domestic legal regime and the constraints facing their implementation in the context of SWSAs, the chapter then turns to consider the Australian context, specifically New South Wales' state laws that contain specific area-based management measures aimed at managing, conserving and protecting the scarce water resources in this Australian state. This analysis is undertaken with a view to scoping possible legal reform for South Africa's water legislation in the concluding part of this chapter.

22 Act 57 of 2003.
23 For a detailed discussion on all threats faced by SWSAs, see WWF-SA (2013: 16).
24 Less than 1% of water source areas are currently mined; however, 70% of the areas in Mpumalanga are under either a prospecting or mining license and this is cause for particular concern, see: WWF-SA (2013: 14).
25 Act 107 of 1998.
26 Act 84 of 1998.
27 Act 10 of 2004.
28 Act 28 of 2002.



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Finally, it should be noted that the discussion of SWSAs in this chapter refers strictly to those providing surface water, and not those providing groundwater.

## 2 Existing South African environmental legal mechanisms for promoting SWSAs

As should be evident from the list mentioned in the introduction, several laws in South Africa are of possible relevance to promoting area-based management of surface water in the country's identified SWSAs. These laws span framework environmental laws, water management laws, protected areas laws, forestry and biodiversity laws, and mineral resource laws. The relevant laws and their potential utility in promoting the management, conservation and protection of the country's SWSAs are discussed in turn below.

### 2.1 Framework environmental laws

NEMA enables the Minister of Environmental Affairs and relevant provincial environmental ministers to list activities which may not be undertaken without an environmental authorisation issued by the competent authority.[29] Prior to granting an environmental authorisation, the competent authority must consider either a basic assessment report or a scoping and full assessment report submitted by the applicant.[30] The lists of activities[31] and regulations governing the relevant assessment process[32] have been published under NEMA. A few of the listed activities constitute activities highlighted in the introduction to this chapter as those potentially threatening SWSAs, and, therefore, while not an area-based management measure, this mechanism may go some way to mitigating the negative impact of activities on SWSAs.

Since December 2014, NEMA accords the Minister of Environmental Affairs the power to:[33]

> …prohibit or restrict the granting of an environmental authorisation…for a listed or a specified activity in a specified geographical area for such period and on such terms and conditions as the Minister may determine, if it is necessary to ensure the protection of the environment, the conservation of resources or sustainable development.

This power provides several opportunities for improving the protection of the country's SWSAs. First, the effect of this provision is that the responsible authority "must not accept any further application for an environmental authorisation for the identified

29 Section 24(2) of the NEMA.
30 Section 24(1) of the NEMA.
31 *Government Gazette* 38282 GNR 982 of 8 December 2014.
32 *Government Gazette* 38282 GNs 983-985 of 4 December 2014.
33 Section 24(2A)(a) of the NEMA.



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listed or specified activity in the identified geographical area until such time that the prohibition has been lifted" and "must deem all pending applications to have been withdrawn".[34] This is a proactive mechanism as it requires the responsible minister to exercise his or her power in accordance with the cautious and risk-averse approach set out in the NEMA's national environmental management principles.[35] It is also a mechanism that deals with both future and existing applications. This is the first provision of its kind in South African environmental legislation.

Secondly, this mechanism provides flexibility in two ways. It gives the Minister a discretion to link certain activities to certain geographical areas, and discretion to remove the restriction or prohibition should the circumstances change. Understanding that each SWSA is different and the shifting science around the determination of these areas,[36] flexibility becomes vital in providing nuanced protection instead of creating blanket protection for all SWSAs. This mechanism is yet to be used generally or in the context of protecting SWSA, and its practical utility accordingly remains uncertain.

## 2.2 Freshwater management laws

The MCAA has been on South Africa's statute book since 1970. Although the purpose of protecting mountain catchment areas does not make explicit reference to water resource (or source) protection, the 1961 Report of the Interdepartmental Committee on the Conservation of Mountain Catchments in South Africa specifically highlighted the protection of water resources as the main driver behind controlling mountain catchments.[37] Mountain catchment areas are therefore beneficial for maintaining water yield and ensuring water quality, whilst contributing to nature conservation, recreation and agriculture simultaneously.[38] The MCAA provides for the declaration of mountain catchment areas[39] and their regulation through the issuing of directions presribed in the Government Gazette.[40] These directions can relate to "the conservation, use, management and control of such land, the prevention of soil erosion, the protection and treatment of the natural vegetation and the destruction of vegetation which is … intruding vegetation".[41] The MCAA, although being one of the obvious statutes of refuge for SWSAs, is problematic for several reasons. The Act is exceptionally outdated as it

34 Section 24(2A)(b) of the NEMA.
35 Section 2(4)(a)(vii) of the NEMA.
36 For an explanation on the process undertaken in mapping the SWSAs and the changes that were subsequently made in that process, see: Nel et al. (2017: 253-254). A more in-depth discussion of refinement of the list of SWSAs is detailed in see Le Maitre et al. (2018: 67-78).
37 Rabie & Burgers (1997: 356).
38 Ibid: 351.
39 Section 2 of the MCAA.
40 Section 3 of the MCAA.
41 Section 3(1) of the MCAA.



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was passed before the coming into effect of the Constitution of the Republic of South Africa, 1996. While it was updated in 1996, the Act largely does not align to the country's post-constitutional dispensation. Furthermore, the directions providing for the conservation, use, management and control of these areas are yet to be published. Regarding governance, the Act places the authority to declare and administer mountain catchment areas in the hands of the provincial government,[42] which is not ideal given the desirability and probable need for nationally declared SWSA to be determined and managed by national authorities. Lastly, mountain catchment areas are overwhelmingly present in the Western Cape, and a few regions of the Eastern Cape and Mpumalanga.[43] This Act will most likely achieve limited protection for SWSAs, particularly in relation to those located in other provinces.

The NWA, on the other hand, generally does not have an area-based focus in its mechanisms toolbox of legal mechanisms. It makes no mention of the term 'SWSAs' and therefore arguably provides a single possible option for SWSA protection: the Minister's power to make regulations for the protection of a water resource, an instream habitat or a riparian habitat.[44] The definition of these features will most likely encompass most of a SWSA's physical features and can thus be used to secure some level of protection, at least for those specific features. These regulations, however, are yet to be enacted, and similar to the provisions in NEMA discussed above, the nature and extent of protection they can possibly offer are currently unknown. Should the Department of Water and Sanitation now undertake a process to develop these regulations, the time-consuming process prescribed in the NWA[45] could defeat the objective of improving protection for SWSAs because this process would run parallel to a process currently being undertaken by the Department to completely overhaul the NWA.[46] In other words, drafting regulations based on an Act that is being reviewed may only create more confusion once the new Act is passed.

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42 *Government Gazette* 16346 GNR 5485 of 7 April 1995. There are issues raised with this assignment of powers and it has caused a great deal of confusion in the provinces, see: Rabie & Burgers (1997: 355).

43 Rabie & Burgers (1997: 354).

44 Section 26 read with Section 1 of the NWA defines 'water resource' to include "a watercourse, surface water, estuary or aquifer"; an 'instream habitat' to include "the physical structure of a watercourse and the associated vegetation in relation to the bed of the watercourse", and a 'riparian habitat' to include "the physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterised by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species which a composition and physical structure distinct from those of adjacent land areas".

45 Section 69 of the NWA. It prescribes a lengthy process that involves both provincial and national Parliament for the drafting and finalising of regulations.

46 Department of Water and Sanitation (2017: 36). This process provides a great opportunity for the development of customised protection for SWSAs and will form the core of the discussion in the last part of this chapter.



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Three other possible options in the NWA – although precarious – may provide some form of protection for SWSAs. The first is by way of definition and regulation of watercourses[47] through licensing.[48] Licences are granted with conditions attached to them to ensure that the licence holder uses the watercourse in such a way that the holder does not pollute it and exercises a general duty of care towards the watercourse at all times.[49] Those watercourses that form part of SWSAs and that are used by licence holders are potentially protected through the licensing mechanism (assuming that the licence holder complies with the licence conditions). However, although watercourses indeed form part of SWSAs, they still need to be distinguished from SWSAs. First, SWSAs are of strategic national significance due to their contribution to the country – economically, socially and environmentally. Secondly, their physical attributes also consist of other natural features (e.g. forests and mountains) which are not watercourses. Reliance on watercourse regulation for SWSA protection is thus insufficient and extremely narrow.

The second option is the Minister's powers to regulate activities of a detrimental nature towards water resources through the declaration of controlled activities.[50] The four named controlled activities do not include, or purport to include, any SWSA-specific measures. Although the NWA allows the Minister to extend this list,[51] it has not been extended for 20 years. The regulation of the four controlled activities will not suffice in deterring the most detrimental impacts to SWSAs that prevail in varying mining, forestry and agricultural activities. Similar to the development of regulations under the NWA, undertaking a process to extend this list of activities would create a process parallel to the review of the NWA that may result in a wasted duplication of effort. Moreover, the regulation of controlled activities adopts a blanket approach in that it applies one set of rules to all water resources in which these activities are being undertaken, failing to consider the unique differences in threats and protection levels required for each SWSA.

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47 Section 1 of the NWA defines a 'watercourse' as "(a) a river or spring; (b) a natural channel in which water flows regularly or intermittently; (c) a wetland, lake or dam into which, or from which, water flows; and (d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks".

48 Section 22(1)(b) of the NWA provides that "a person may only use water if that water use is authorised by a licence under this Act". Section 21 of the NWA lists a number of water uses which include impeding or diverting the flow of water in a watercourse, altering the bed, banks, course or characteristics of a watercourse, and other activities involving the water resource (which by definition, includes watercourses).

49 Sections 28 and Section 29 of the NWA.

50 Section 37 of the NWA identifies four controlled activities: the irrigation of land using water containing waste generated through industrial activity; activities which modify atmospheric precipitation; a power generation activity that changes the flow of a water resource; and intentional recharging of an aquifer with waste water.

51 Section 38 of the NWA.



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The third option is the possibility of SWSAs being managed by catchment management agencies (CMAs) that manage those WMAs within which SWSAs exist. Contrarily, it can be argued that the national significance of these areas would not be best managed regionally, particularly when considering the extent of the powers of CMAs.[52] Due to their powers being assigned and/or delegated before they can be exercised, CMAs have experienced challenges in exercising their powers in recent years due to the Minister revoking powers that had been previously assigned or delegated. [53] Thus, it would not appear wise for SWSA to be managed regionally by CMAs whose powers and functions have been undermined and crippled in the past few years.

## 2.3 Protected areas laws

Different categories of protected areas[54] can be declared[55] to achieve specific purposes[56] under NEMPAA. These include national parks, marine protected areas, special nature reserves, nature reserves and protected environments. Certain protected areas are declared and regulated under specific Acts, such as the declaration of mountain catchment areas under the MCAA.[57] However, as the framework legislation for the management of protected areas generally, certain provisions of NEMPAA still apply to all types of protected areas.

The benefit of including SWSAs within South Africa's protected areas network is the protection they would gain from mining-related activities generally.[58] There is also

52 Section 79 of the NWA sets out the general powers and duties of CMAs. Section 73 of the NWA provides that the Minister can also assign further powers to CMAs, including those listed in Schedule 3 of the Act. None of these powers are specifically related to SWSAs.

53 South African Water Caucus (undated: 19-20). This report was released in November 2017 and amongst other things, it highlights pertinent issues around the delegation and subsequent revocation of the CMAs powers by the Minister, as well as uncertainty as to the role of CMAs generally. This report was widely publicised in numerous news articles and radio interviews, see: Arendse (2017); Matthews (2017); Makhowana (2017); and Fraser (2017).

54 Section 9 of the NEMPAA.

55 Depending on whether it is a national or provincial protected area, either the national Minister of Environmental Affairs or a relevant provincial environmental minister can declare the area.

56 The general purpose for declaring protected areas is set out in Section 17 of the NEMPAA. The purpose for declaring special nature reserves is set out in Section 18 of the NEMPAA. The purpose for declaring national parks is set out in Section 20 of the NEMPAA. The purpose for declaring nature reserves is set out in Section 23 of the NEMPAA. The purpose for declaring protected environments is set out in Section 28 of the NEMPAA.

57 See the discussion on mountain catchment areas in part 2.2 above.

58 Section 48(1)(a) and (c) of the NEMPAA provide that prospecting, mining, exploration and production is expressly prohibited within special nature reserves, national parks, nature reserves, world heritage sites, marine protected areas and forest protected areas. Section 48(1)(b) provides that the Ministers of Mineral Resources and Environmental Affairs can give consent for mining-related activities to continue within a protected environment. The Act is silent on mining-related



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wide scope for regulating and managing protected areas more closely. The Minister of Environmental Affairs or relevant provincial environmental minister has the power to regulate a variety of activities that may negatively affect SWSAs found in protected areas, such as the use of land and water in protected areas, and prohibiting or restricting land uses in protected areas that are harmful to the environment.[59] These regulations are strengthened by the offences and penalties that may be meted out for contravention thereof.[60] Furthermore, the Minister may generally assign the management of protected areas to any suitable person or organ of state.[61] Should the management authority fail in its duties or underperform, the Minister similarly has the power to terminate its management authority.[62]

The challenges with protected areas, however, are also dire. Mining-related activities may still be conducted in protected environments.[63] This legislative anomaly results in protected environments being targeted as 'low hanging fruit' for mining companies.[64] Although other types of protected areas are explicitly protected from mining-related activities, there has been a tide of applications for mining activities in and around protected areas that were indeed authorised, causing a flood of litigation in an attempt to review and set aside these decisions in the recent years.[65] So even though approximately 13% of South Africa's SWSAs currently enjoy formal legal protection in the form of protected areas,[66] even these are not sterilised from mining-related activities in the true sense. To add a layer of complexity to the matter, more than 80% of South Africa's landscape that is critical for the country's water security and supply still remains unprotected. This statistic alone should drive the urgent need for dedicated legislation aimed at protecting the country's SWSAs.

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activities being conducted within mountain catchment areas. Nonetheless, the latter two types of protected areas pose challenges for SWSA protection, which will be discussed below.

59 Section 86(1)(c)(vi) and (d)(iii) of the NEMPAA. Municipalities also have the power to regulate local protected areas in terms of their by-laws (Section 49(c) of the NEMPAA).

60 Section 89(3) of the NEMPAA.

61 Section 38(1)(a), (aB) and (b) of the NEMPAA. The management of national parks more specifically must be assigned to the South African National Parks Authority in terms of Section 38(1)(aA) of the NEMPAA. The management authority has powers to also create internal rules for the proper administration of the protected area in terms of Section 52 of the NEMPAA. The Minister has passed regulations which assign powers to certain management authorities whilst simultaneously detailing the manner in which protection of these declared areas should be exercised. See for example: *Government Gazette* 39891 GN 15 of 1 April 2016 (for Mountain Zebra Camdeboo Protected Environment); *Government Gazette* 39379 GN 1074 of 6 November 2015 (for Dwesa-Cwebe Marine Protected Area); and *Government Gazette* 32797 GN 1175 of 11 December 2009 (for Knysna Protected Environment).

62 Section 44 of the NEMPAA.

63 Section 48(1)(b) of the NEMPAA requires the permission of both the Ministers of Mineral Resources and Environmental Affairs in this case.

64 See generally: Centre for Environmental Rights (2016: 28); WWF-SA (2017); and Davies (2015).

65 See further Davies (2015).

66 For a breakdown of the percentage of protection for each SWSA, see Nel et al. (2017: 256).



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## 2.4 Forestry and biodiversity laws[67]

The NFA provides for the declaration of forest protected areas.[68] Once declared, layers of protection apply to the forest protected area that would be advantageous for SWSAs that fall within such areas. Considering the extent to which SWSAs have forests within them or even fall into forest protected areas,[69] this tool advances protection for SWSAs. First, the forest may not be cut, disturbed, damaged or destroyed except by way of licence, in terms of an exemption from the Minister, in terms of the rules for the proper management of the forest protected area, in terms of a right of servitude, or with consent of the registered owner in the case of a protected forest area situated outside a State forest.[70] Furthermore, the Minister has the power to declare a 'controlled forest area':[71]

> if the Minister is of the opinion that urgent steps are required to prevent the deforestation or further deforestation of; or rehabilitate a natural forest or woodland which is threatened with deforestation, or is being or has been deforested.

Forest protected areas must be managed by making rules to achieve the purpose for which the area was declared.[72] As an overarching protected areas framework, Chapters

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67 For a detailed explanation on forestry and biodiversity laws, see generally Paterson (2014a and b).

68 Section 8 of the NFA gives the Minister the power to make such a declaration. Section 18 of the NFA read with regulation 17 of the Regulations of the National Forest Act (published in *Government Gazette* 32185 GNR 466 of 29 April 2009) also give any person, organisation or organ or state the right to apply to the Minister to have a forest declared protected. The same applies to an owner of private land who wishes to have a forest on their own land declared protected. They too may apply to the Minister in terms of regulation 18 of the Regulations of the National Forest Act.

69 Plantation forestry is the major land-use in the Mpumalanga Drakensberg, Upper Usutu, Mbabane Hills, Wolkberg and Mfolozi Headwaters and also occupies a substantial proportion of the Enkangala Grassland, Southern Drakensberg, Outeniqua and Amatole SWSAs. See Le Maitre et al. (2018: 151).

70 Section 10(1) of the NFA.

71 Section 17(2) of the NFA. This declaration may stop any person from using their right of access into the area, prohibit a person from removing forest produce from the area, suspend licences issued in respect of this area (a forward-looking mechanism, in the author's opinion), require the owner to take steps to prevent deforestation or rehabilitate the natural forest/woodland, and require the owner to submit and comply with a forest management plan. See, for example, *Government Gazette* 33734 GN 1032 of 12 November 2010, where the Minister declared the Declaration of Phase 2A of the Olifants River Water Resources Development Project Offsite Mitigation Area as Controlled Forest Area. In this declaration, the Minister prohibited grazing, unauthorised removal of forest produce, cultivation, any activities which, may cause deforestation or prevent rehabilitation and transplanting for a fixed period of three years, and simultaneously suspended any licences that had been granted in respect to this area. The Minister also required the following steps to be taken: rehabilitation; transplanting of vegetation; and the submission of a sustainable management plan for the area.

72 Section 11(2) of the NFA. These rules need not be created by the Minister where they already exist.



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1 and 2 of NEMPAA[73] and Section 48 NEMPAA,[74] also apply to forest protected areas declared under the NFA.[75] The overall challenge in using this tool for SWSA protection would arise when attempting to regulate an area that comprises many features through a law that deals with a single aspect thereof. The limited application to forests would result in the rest of the SWSA (their watercourses, mountain catchments, etc. that fall outside the forest area) not enjoying the same protection. Furthermore, forestry plantations of alien and invasive species are one of the major threats to SWSAs as they use more water than natural forests and if not properly managed, the invasive plantations pose a risk to water availability within the SWSAs.[76] Although not dealt with in the NFA, the regulation of alien and invasive species is governed by the country's biodiversity legislation.

Measures for protecting biodiversity in NEMBA are potentially effective but currently ineffective. The identification of ecosystems that are threatened and in need of protection[77] has been done by the Minister,[78] but the identification of the corresponding threatening activities which may not be commenced within such areas without an environmental authorisation being granted under NEMA[79] has not. Although some of the key threats against SWSAs are already identified and are being regulated in terms of the authorisations process in NEMA,[80] it does not deal with all threats, particularly those pertaining to biodiversity issues such as plantations of invasive and alien species. This tool's utility is therefore in a state of limbo as far as the ecosystems approach is concerned. Biodiversity planning tools also provide some level of guidance in decision-making processes affecting certain areas, but do not provide offences and penalties for those who fail to comply with them. Relevant biodiversity planning tools would include the National Biodiversity Framework[81] which identifies priority areas for conservation action and the establishment of protected areas.[82] Unlike the National Water Resource Strategy which is grounded in the NWA and which explicitly "endorsed and acknowledged [SWSAs] as strategic national assets at the highest level in all

73 These chapters deal with the objectives of the Act, state trusteeship of protected areas, application of the Act, application of NEMA, application of NEMBA, conflicts with other legislation, status of provincial legislation on provincial and local protected areas, kinds of protected areas, register of protected areas, norms and standards, provincial protected areas, world heritage sites, continued existence of marine protected areas, specially protected forest areas, and mountain catchment areas.
74 This section deals with the prohibition of mining-related activities in forest protected areas.
75 Section 15 of the NFA.
76 WWF-SA (2013: 16).
77 Section 52 of the NEMBA.
78 *Government Gazette* 34809 GN 1002 of 9 December 2011.
79 Section 53 of the NEMBA.
80 Such as forestry plantations and mining activities.
81 Section 38 and 39 of the NEMBA. The National Biodiversity Framework is published in *Government Gazette* 32474 GNR813 of 3 August 2009.
82 Section 39(1)(c) of the NEMBA.



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sectors",[83] the National Biodiversity Framework which is grounded in NEMBA falls short of such an endorsement. Instead, one of its strategic objectives is the expansion of the protected areas network and conservation areas.[84] Although SWSAs may possibly be protected through this measure, grave shortcomings persist.[85] Declaring SWSAs as bioregions is an alternative method of reinforcing their protection. Unfortunately, only a very few bioregions have been declared to date in South Africa.[86] Their practical effectiveness is therefore currently difficult to determine. Moreover, the characteristics of a bioregion[87] do not align with the characteristics of an SWSA.[88] Using this measure even innovatively would still not satisfy the need for customised legal protection of SWSAs. Fortunately though, the declaration of a bioregion simultaneously requires the publication of bioregional plan "for the management of biodiversity and components of biodiversity in such a region"[89] which could potentially be used to detail SWSA protection. Lastly, SWSAs falling within an ecosystem declared as either being in threat or requiring protection[90] would also benefit from being managed in terms of a biodiversity management plan, which aims to ensure the long-term survival of the ecosystem.[91] However, of all the biodiversity management plans published to date, none of them relate to ecosystems (area-based) management.[92]

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83 Department of Water Affairs (2013: 44).

84 Paragraph 4.5 of the National Biodiversity Framework.

85 See discussion on protected areas in part 2.3 above.

86 These are bioregional plans for: Nelson Mandela Metropolitan Municipality (*Provincial Gazette* 3362 PN13 of 20 March 2015); and West Rand District Municipality and Ekurhuleni Metropolitan Municipality (*Provincial Gazette* 2684 PN390 of 2 September 2015).

87 Section 40(1) of the NEMBA provides that a bioregion is a "region which contains whole or several nested ecosystems and is characterised by its landforms, vegetation cover, human culture and history".

88 SWSAs often only occupy a small fraction of the land surface area but supply a relatively high amount of water to the surrounding region, see: Nel et al. (2017: 251).

89 Section 40(1)(b) read with Section 41 of the NEMBA. This plan is required to be reviewed at least every five years in terms of Section 42 of the NEMBA.

90 In terms of Section 52 of the NEMBA.

91 Section 43 read with Section 45(a) of the NEMBA. The plan is required to be reviewed at least every five years in terms of Section 46 of the NEMBA.

92 Instead they relate to species protection. See for example: *Government Gazette* 31968 GNR 214 of 2 March 2009; *Government Gazette* 34388 GNR 416 of 24 June 2011; *Government Gazette* 36096 GNR 49 of 25 January 2013; *Government Gazette* 36411 GNR 433 of 26 April 2013; *Government Gazette* 40793 GN 305 of 21 April 2017; *Government Gazette* 40883 GN 423 of 2 June 2017; and *Government Gazette* 41498 GN 214 of 16 March 2018. There is only one draft plan relating to ecosystems protection, which is yet to be finalised (*Government Gazette* 39922 GN 427 of 15 April 2016). However, Norms and Standards for Biodiversity Management Plans for Ecosystems have been published (*Government Gazette* 37302 GN 83 of 7 February 2014).



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## 2.5 Mineral resource laws

The MPRDA prohibits mining activities within 'no-go mining areas'[93] (amongst other areas), which the Minister of Mineral Resources is empowered to declare by restricting or prohibiting the granting of a reconnaissance permission, prospecting right, mining right or permit within an identified geographical area.[94] However, the Minister is also allowed to issue these permits, rights and permissions within the 'no-go' areas based on certain grounds.[95] This exception can only be made subject to Section 48 of the NEMPAA.[96] This means that if the 'no go' area is indeed a declared protected area, mining and mining-related activities are completely prohibited therein, despite the Minister wishing to invoke the grounds of exception. The sole benefit of the Minister using this tool to protect SWSAs is the plausibly strong political message associated with it – it is far more convincing for the Minister of Mineral Resources to publicise an intention to protect a certain environment 'from' mining, when their mandate is to ensure the development of mineral resources 'through' mining. Unfortunately, the disadvantages of this legal mechanism far outweigh the advantages. First, the purpose of declaring 'no-go mining areas' is based on "the national interest, the strategic nature of the mineral in question and the need to promote the sustainable development of the nation's mineral resources".[97] This intention generally does not consider the need to protect the environment or SWSAs within these environments.[98] As expected, it relates to a law completely juxtaposed to environmental protection. Secondly, even if so declared, it would protect SWSAs from only one of many threats posed thereto,[99] leaving SWSAs exposed to a plethora of inherent risks. Lastly, on the very limited occasions that the Minister has made such declarations, the period of application has generally

93 Section 48 of the MPRDA.
94 Section 49 of the MPRDA.
95 Section 48(2) of the MPRDA: A reconnaissance permission, prospecting right, mining right or mining permit may be issued in respect of the land contemplated in subsection (1) if the Minister is satisfied that (a) having regard to the sustainable development of the mineral resources involved and the national interest, it is desirable to issue it; (b) the reconnaissance, prospecting or mining will take place within the framework of national environmental management policies, norms and standards; and (c) the granting of such rights or permits will not detrimentally affect the interests of any holder of a prospecting right or mining right.
96 Section 49 read with 48(1)(d) of the MPRDA.
97 Section 49(1) of the MPRDA.
98 Very few exceptional cases do exist. For example: *Government Gazette* 38004 GN 718 of 12 September 2014 had "regard to the national interest to protect the sensitive environment of areas within the buffer zone of the Mapungubwe World Heritage Site". *Government Gazette* 34051 GN of 4 March 2011 had "regard to the national interest to protect the sensitive environment of areas around Lake Chrissie, commonly known as the Chrissiesmeer Biodiversity Site".
99 For example, forestry plantations of invasive and alien species, poorly managed agricultural land due to overgrazing, amongst others. For a detailed discussion on all threats faced by SWSAs; see WWF-SA (2013: 16).



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been short and applicable to certain parts of the country,[100] which results in an uncoordinated approach to ensuring meaningful protection, regulation, management (and sometimes rehabilitation, where required) of SWSAs.

Having analysed the possible opportunities inherent in South Africa's current legal regime for promoting the management and protection of the country's SWSAs, and concluded that by far the majority fails to provide a coherent and integrated solution, it would now seem prudent to consider possible approaches adopted in other water-scarce countries, such as the state of New South Wales in Australia. The purpose of this enquiry is to determine whether they provide examples of more feasible and dedicated regimes for protecting SWSAs from which South Africa's policy-makers could learn.

## 3 The protection of water source areas in Australia: a comparative analysis

Similarities between South Africa and Australia's legal water context are eloquently summarised by one commentator below:[101]

> Australia and South Africa both inherited legal systems with water laws developed in response to well-watered European climatic conditions. Thus the common law systems for regulating water use reflected non-indigenous environmental contexts. As a consequence, these water laws imported regulatory forms with many inappropriate constructs and assumptions. As statutory regimes developed the focus was upon water supply and physical infrastructure development with little consideration of the consequent environmental modifications. Recent reforms in both countries have been predicated on identified social and economic goals and the objectives of environmental protection that more clearly take into account prevailing physical and social contexts.

The utility of a comparison between South Africa and Australia's water laws flows naturally from this premise.[102] Globally, Australia is the second driest continent (to

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100 The following are examples. *Government Gazette* 40277 GN 1014 of 15 September 2016 applied in a certain part of the Eastern Cape for 18 months and was further extended by another 18 months by *Government Gazette* 40898 GN 546 of 9 June 2017. *Government Gazette* 38004 GN 718 of 12 September 2014. *Government Gazet*te 38128 GN of 31 October 2014 is one of the rare declarations which apply for an indefinite period but only in the Free State. *Government Gazette* 36490 GN 367 of 24 May 2013 applied for 10 years to certain portions of land. *Government Gazette* 33511 GN 768 of 31 August 2010 applied nationally, but only for six months. It was later extended by another six months in respect to Mpumalanga and by 12 months for the rest of the country in *Government Gazette* 34057, GN 160 of 28 February 2011. This notice was again extended by another two weeks (to the extent that it applied nationally) by *Government Gazette* 34171 GN 287 of 31 March 2011. *Government Gazette* 28216 GN 1118 of 18 November 2005 applied in a certain part of Limpopo.

101 Godden (2005: 182).

102 However, unlike South Africa, the Commonwealth of Australia was formed by the federation of six states (New South Wales, Queensland, South Australia, Tasmania, Victoria and Western Australia), which retained their powers to create and execute its own laws. It also comprises of ten territories (areas which are not claimed by any of the states), some which are governed purely



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Antarctica)[103] and the driest continent that sustains a permanent human population,[104] with an average rainfall of 430 mm per year.[105] Most of this water is lost to evaporation and on average, about 383,000 gigalitres remain for Australia's water environments and approximately 70,000 to 95,000 gigalitres provide for Australia's annual consumptive water needs.[106] These statistics are similar to South Africa's water situation. In Australia's worst drought since the 1900s, however, it suffered sustained impacts during what was then coined as the 'Millennium Drought' during 2001-2009.[107] Similar to South Africa, dam levels dropped significantly throughout the country,[108] lessening water available for supply and ultimately resulting in water restrictions being put in place coupled with large-scale technological interventions to manage the drought.[109]

The Water Act (2007),[110] a Commonwealth law, was enacted as a response to the prolonged pressures of the Millennium Drought.[111] The Act mainly regulates, manages and protects the use of Australia's largest water catchment (the Murray-Darling Basin[112] (MDB)) amongst other things. The MDB stretches over 14% of Australia's landscape which consists of four states and a single territory.[113] Approximately 77,000km of rivers (23 rivers in total)[114] flow through it, which include Australia's three largest river systems.[115] It also provides about 40% of the Commonwealth's agricultural output and houses 65% of its irrigated land.[116] Acknowledging its importance and significant contribution towards socio-economic and environmental factors, the Water Act (2007) establishes the Murray-Darling Basin Authority,[117] which developed the

by Commonwealth laws and others which are self-governing. Australia is therefore a federal government system whereby the Commonwealth is governed by national legislation passed by the Parliament of the Commonwealth, and each of the six states are further governed by state laws passed by State Parliament. States are only permitted to pass laws which are not controlled by the Commonwealth in terms of Section 51 and 122 of the Commonwealth of Australia Constitution (1900).

103 Argent (2017: 5).
104 Godden (2005: 183).
105 Argent (2017: 5).
106 Ibid.
107 van Dijk et al. (2013: 1040-1041).
108 Lindsay & Supski (2017: 51).
109 Ibid.
110 For a discussion on the historical development of the Water Act 2007 and the extent to which it gives powers to the Commonwealth to manage water resources, see generally: Fisher (2009: 154-160).
111 Loch & Adamson (2015: 1432).
112 For more information and a general overview on the Murray-Darling Basin, see: Murray Darling Basin Authority (2014: 1-5).
113 Bischoff-Mattson & Lynch (2017: 42)
114 Loch & Adamson (2015: 1431).
115 Murray Darling Basin Authority (2014: 1 and 4).
116 Loch & Adamson (2015: 1431).
117 Part 9 of the Water Act (2007).



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Murray-Darling Basin Plan.[118] It also establishes a Commonwealth Environmental Water Holder whose main function is to manage the Commonwealth's environmental water, in order to protect and restore the environmental assets of both the MDB and those outside the MDB where the Commonwealth owns water.[119] The Water Act (2007) does not, however, provide further protection, regulation and management laws for SWSAs within the MDB at a Commonwealth level.[120] New South Wales' state laws pertaining to water source protection and regulation that do so are studied in turn below.

## 3.1 State laws of New South Wales: water catchment regulation

### 3.1.1 Declared areas

The Water NSW Act (2014) (the Water Act) provides for the declaration of three types of areas: declared catchment areas;[121] special areas;[122] and controlled areas;[123] Currently, the Sydney Catchment Area is the only declared catchment area and it is critical for the supply of water to Sydney, as well as the Blue Mountains, the Illawarra, the Southern Highlands and parts of the Shoalhaven area.[124] The catchment extends about 16,000 square kilometres and although forming only 2% of New South Wales, it provides 60% of the inhabitants' drinking water.[125] Due to its undeniably critical role, the Water Act specifically provides that the size of the catchment shall not be reduced, and an order to revoke the catchment's declaration can only be made by an Act of Parliament.[126]

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118 Part 2(1) of the Water Act (2007). This plan is a legislative instrument and any amendment thereto is a legislative amendment (Section 33 of the Water Act (2007)). The purpose of the plan is to provide for the integrated and sustainable management of water resources in the MDB (Section 20 of the Water Act (2007)). This plan was passed as law in November 2012.

119 Part 6(2) of the Water Act (2007).

120 This is expected due to the Commonwealth, but for one major exception (the MDB) historically having refrained from managing Australia's water resources. States are left to do so, and where water resource traverse more than one State, they enter into interstate agreements pertaining to that resource, see Fisher (2009: 154).

121 Part 4(2) of the Water NSW Act (2014).

122 Part 4(2) of the Water NSW Act (2014).

123 Part 4(3) of the Water NSW Act (2014).

124 Alluvium Consulting Australia (2017: 4). This is the most recent audit as catchment audits are required every three years from the last publication date, see: Section 42(4) of the Water NSW Act (2014).

125 See generally: Water NSW and Office of Environment and Heritage (2015: 9); and <https://www.waternsw.com.au/water-quality/education/learn/catchment> (accessed 9-12-2017).

126 Section 40(3) of the Water NSW Act (2014).



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Special areas located within the catchment are declared for purposes of ensuring that good quality of stored water is maintained (be it that it is used for drinking or other purposes) and that the ecological integrity of the declared area is maintained.[127] Similar to catchment areas, they may not be reduced in size except by way of an Act of Parliament.[128] A management plan must also be developed[129] to grant varying levels of access into the respective special areas, which must be carried out and given effect to by law.[130] Statistically, special areas form about 23% of the broader Sydney Catchment Area. They are pockets of mixed land types which may comprise of legally protected areas, land owned by Water NSW (i.e. state-owned land) and privately owned land.[131] Mimicking this type of composition would provide much-needed flexibility when regulating South Africa's SWSAs, which too comprise of protected areas, state-owned land and private land. Except to say that controlled areas may be declared, the Water Act itself is very discreet about the management and regulation thereof.[132] Once declared though, regulations may be made to provide for the management of different activities within controlled and special areas, such as abstracting, using, polluting or contaminating waters therein.[133] For purposes of furthering this discussion, controlled areas will not be dealt with in great detail.

### 3.1.2 Objectives

The Special Areas Strategic Plan of Management (2015) (SASPoM) is grounded in the Water Act.[134] It lays down a set of strategic management objectives to give guidance for planning and prioritising projects and programs within special areas, which address issues of water quality, water quantity, maintenance of the hydrological integrity of surface and groundwater sources, fire management, maintenance of ecological integrity of biodiversity, and policy, planning and evaluation amongst others. Some key objectives include:[135]

- pollutants are controlled so that impacts on water quality and natural and cultural values are minimised;

127 Section 47(2) of the Water NSW Act (2014).
128 Section 47(3) of the Water NSW Act (2014).
129 Section 52 of the Water NSW Act (2014). The Special Areas Strategic Plan of Management has been developed and will be discussed below.
130 Section 53 of the Water NSW Act (2014).
131 For a detailed breakdown on the land composition of each special area in the Sydney Catchment Area, see: Water NSW and Office of Environment and Heritage (2015: 6).
132 Section 54 of the Water NSW Act (2014).
133 Sections 55 of the Water NWS Act (2014). The Water NSW Regulations (2013) are in place and will be discussed below.
134 Section 53 of the Water NSW Act (2014).
135 Nine objectives are set out, see: Water NSW and Office of Environment and Heritage (2015: 21).



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- surface and groundwater sources and their interactions will be better understood so decisions are made that seek to minimise impacts on Special Areas hydrological integrity;
- access to the special areas is controlled to protect water quality and ecological integrity while providing for appropriate visitor opportunities; and
- ecological integrity including threatened plant and animal species, endangered populations, endangered ecological communities, geodiversity and other natural values are maintained.

Through the achievement of these objectives, all issues faced within special areas are intended to be managed appropriately. Again, considering threats faced by SWSAs[136] (such as forestry plantations of alien and invasive species, fires, and impacts arising from mining activities), objectives of this nature form a workable framework within which measures could be taken to ensure the most comprehensive form of protection for SWSAs.[137]

### 3.1.3 Regulating activities and developments within declared areas

The Water NSW Regulation (2013) (the Regulations) divides special and controlled areas into Schedules 1 and 2 land.[138] Schedule 1 land consists of both special areas and controlled areas immediately surrounding water storages, and public entry therein is prohibited.[139] Schedule 2 land consists only of special areas that form a buffer to Schedule 1 land, to which restricted public access is allowed to encourage recreational activities by the public.[140] The Regulations deal with many aspects of, and threats to, SWSAs in very clear and direct terms. No one may interfere with water in a special or controlled area either by damming, diverting or taking such water.[141] The disposal of waste in a special or controlled area is prohibited, as well as land or water pollution therein.[142] Stock control,[143] intensive livestock agriculture[144] and the lighting of fires[145] are all dealt with separately.

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136 For a detailed discussion on all threats faced by SWSAs, see: WWF-SA (2013: 16).
137 These objectives are also subject to review at each review cycle and therefore offer flexibility in terms of providing for other (perhaps currently unforeseen) issues to be dealt with accordingly in future. See further: Water NSW and Office of Environment and Heritage (2015: 21).
138 For a full list of these areas, see: Schedules 1 and 2 of the Water NSW Regulation (2013).
139 Water NSW and Office of Environment and Heritage (2015: 13).
140 Ibid.
141 Regulation 12 of the Water NWS Regulation (2013).
142 Regulation 13 of the Water NWS Regulation (2013).
143 Regulation 14 of the Water NWS Regulation (2013).
144 Regulation 28 of the Water NSW Regulation (2013).
145 Regulation 22 of the Water NSW Regulation (2013) completely prohibits the lighting of fires in Schedule 1 land. Regulation 23 of the Water NSW Regulation (2013) restricts the lighting of fires in Schedule 2 land.



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Mining impacts are monitored by Water NSW in terms of the SASPoM. Although not having any legislated powers to prevent mining within special areas, Water NSW's partial ownership of land in the special areas gives them the platform to make recommendations to the State, regulators and mining companies on any proposed mining activities within the catchment.[146] The Minister of Industry, Resources and Energy has, surprisingly, ensured that no coal seam gas mining licences are granted within the special areas of the catchment through an initial moratorium placed on such mining in 2013,[147] followed by a once-off petroleum exploration licences buy-back process from December 2014-September 2015 in terms of the NSW Gas Plan.[148] This is an excellent example of cooperative governance in matters affecting the environment.

When it comes to development (be it agricultural, residential or commercial) within catchment areas, special areas and controlled areas, reliance is placed on the Environmental Planning and Assessment Act (1979) that provides the statutory framework for planning and environmental impact assessment. It sets a higher threshold for development applications to be granted within the Sydney Catchment Area (which includes special areas and control areas located therein) by providing that:[149]

> Provision is to be made in a State Environmental Planning Policy requiring a consent authority to refuse to grant consent to a development application relating to any part of the Sydney drinking water catchment unless the consent authority is satisfied that the carrying out of the proposed development would have a *neutral or beneficial effect* on the quality of water. (own emphasis)

Clause 3 of the State Environmental Planning Policy (Sydney Drinking Water Catchment) (2011) includes this provision in its aims,[150] as well as in the context of the assessment and approval of development and activities.[151] This golden rule is applied even in cases of existing developments for which extension or expansion applications are brought before the state,[152] therefore being implemented as a 'double-edged sword' in its regulation of both new and existing applications within the catchment. This is a

146 See <https://www.waternsw.com.au/water-quality/catchment/mining/sca-role> (accessed 24-5-2018).

147 Validakis (2013).

148 NSW Government (2014). This process resulted in the buying back of 16 petroleum exploration licences and the reduction of the coal seam gas footprint from more than 60% of the state to just 8.5%.

149 Section 3.26 (2) of the Environmental Planning and Assessment Act (1979).

150 Clause 3 of the State Environmental Planning Policy (Sydney Drinking Water Catchment) (2011). The three aims of this policy are: to provide for healthy water catchments that will deliver high quality water while permitting development that is compatible with that goal; to provide that a consent authority must not grant consent to a proposed development unless it is satisfied that the proposed development will have a neutral or beneficial effect on water quality; and to support the maintenance or achievement of the water quality objectives for the Sydney drinking water catchment.

151 Clause 10 of the State Environmental Planning Policy (Sydney Drinking Water Catchment) (2011).

152 Clause 11A of the State Environmental Planning Policy (Sydney Drinking Water Catchment) (2011).



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particularly beneficial tool for detrimental activities currently continuing within SWSAs, such as mining; the rights and permits of which are subject to renewal. This important requirement is further detailed in the Neutral or Beneficial Effect Water Quality Assessment Guideline (2015),[153] which decision-makers are legally compelled to take into account. It gives meaning to the neutral or beneficial effect (NorBE) requirement as follows:[154]

> A neutral or beneficial effect on water quality is satisfied if the development: (a) has no identifiable potential impact on water quality, or (b) will contain any water quality impact on the development site and prevent it from reaching any watercourse, waterbody or drainage depression on the site, or (c) will transfer any water quality impact outside the site where it is treated and disposed of to standards approved by the consent authority.

The NorBE Guideline also prescribes the manner in which one would achieve this requirement and how to assess an application against it.[155] It provides a clear, straightforward and practically manageable way of ensuring the ecological integrity and optimal hydrological functioning of the catchment and all special areas within it, as it clearly indicates to all potential applicants that in the first instance, all developments are strictly prohibited within the catchment. It also rids the decision-makers of confusion as to whether or not certain activities may, or may not be, permitted within certain boundaries of the catchment, as it provides a clear method for proving the NorBE requirement and assessing a development against its prescripts. The NorBE requirement is also strategically worded so that it prevents the granting of applications that would cause any level of harm to the catchment. It therefore precludes authorities from having to ensure that applicants have security in place to later rehabilitate the environment once the damage has been done. In this way, a proactive approach is taken when protecting the Sydney Catchment Area from possible deterioration.

### 3.2 Lessons for South Africa: towards SWSA protection

The South African government has endorsed SWSAs "as strategic national assets at the highest level in all sectors" in the National Water Resource Strategy,[156] a policy which is grounded in the NWA.[157] Why the NWA, the country's main freshwater management legislation, contains no express measures specifically designed to manage, conserve and protect these acknowledged SWSAs is puzzling? Instead, it focuses mostly on managing, protecting and regulating water as a resource. A broader application of the NWA is therefore necessary to go beyond the management of water

153 Sydney Catchment Authority (2015: 1-70).
154 Ibid: 6.
155 Ibid.
156 Department of Water Affairs (2013: 44).
157 Sections 5-7 of the NWA.



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resources and catchments, to include the management of those key areas from which vast amounts of water resources originate. So how can this be achieved, drawing from lessons learnt through the Australian experience?

### 3.2.1 Declared areas

Firstly, recognition must be given in the NWA to the term 'strategic water source areas', to distinguish them from catchments and WMAs. This can be achieved by defining what an SWSA is and then making provision for their formal designation by way of publication of notices and associated maps in the *Government Gazette*.[158] Given that SWSAs are of strategic national significance, perhaps the authority to declare these areas should vest in the national Minister of Water and Sanitation. The NWA should perhaps also preclude the reduction of the size of SWSAs except by way of formal amendment by the Minister.

Provisions on water source management that contextualise SWSAs within the catchments that they fall into and that enable the adoption of rules to regulate these areas need to be developed, similar to the management rules for special areas adopted in New South Wales. Area-based management is no new concept in South African environmental law.[159] However, it needs to be translated into water-focussed area-based measures. Just as New South Wales declares special areas through its Water NSW Act (2014) and controls them through regulations and management plans, so should South Africa declare SWSA through the NWA, ensuring that it similarly provides the necessary regime to manage and control activities undertaken in these areas once designated. Furthermore, given that the land potentially falling into SWSAs may span state-owned and privately-held land, the NWA should ideally provide for the designation of both forms of land tenure as SWSAs.

### 3.2.2 Objectives

The current objectives of the NWA are to ensure that: [160]

> the nation's water resources are protected, used, developed, conserved, managed and controlled in ways which take into account [the following] factors:
>
> (a) meeting the basic human needs of present and future generations;
>
> (b) promoting equitable access to water;

158 Ideally, the definition should not be scientific but rather descriptive so as to provide clarity to any lay person as to the specific types of geographical areas that are ring-fenced as SWSAs.
159 Section 24 of NEMA.
160 Section 2 of the NWA.



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(c) redressing the results of past racial and gender discrimination;

(d) promoting the efficient, sustainable and beneficial use of water in the public interest;

(e) facilitating social and economic development;

(f) providing for growing demand for water use;

(g) protecting aquatic and associated ecosystems and their biological diversity;

(h) reducing and preventing pollution and degradation of water resources;

(i) meeting international obligations;

(j) promoting dam safety;

(k) managing floods and droughts.

As is, these objectives are well crafted and well suited for SWSA protection, except in so far as they still require slight revision to reflect the needs and aims specifically relevant to area-based protection measures.

### 3.2.3 Regulating activities and developments within declared areas

Should the NWA equip the Minister with authority to declare SWSAs, it is recommended that provision should also be made to regulate all threatening activities within SWSAs. The latter could be achieved through the identification of threatening activities in the NWA itself;[161] by cross-referencing the already identified activities in the 2014 NEMA EIA Regulations Listing Notices to make them applicable to SWSAs declared under the NWA;[162] or by providing the Minister of Water and Sanitation with regulatory powers to identify activities that may not commence within SWSAs except if they meet a certain standard. The last of these approaches is strongly encouraged in that it can be specifically tailored to suit SWSAs and the threats posed to them. It is suggested that the standard constitute a 'golden rule' similar or identical to New South Wales' NorBE requirement. The standard should be briefly described within the NWA itself for legal backing, and fleshed out if necessary in appropriate policies and guidelines. The standard would ideally need to be defined and be capable of measurement so as to enable authorities to implement reporting and monitoring requirements. In this way, similar to New South Wales, South Africa would be in a position to apply a single, clear and practical rule to all applications made for the commencement of identified activities within SWSAs through the NWA, its regulations and policy documents.

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161 The amendment of an Act is a far slower and more burdensome process to undertake, should there be a need to amend these identified activities over time.

162 Given that the NWA is a specific environmental management Act listed under the NEMA, it would be relatively easy to make all listed activities applicable in SWSAs too. This would result in the commencement of such activities in SWSAs requiring environmental authorisation from the Minister of Environmental Affairs.



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## 4 Conclusion

The need for robust legal protection of South Africa's SWSA goes without saying. The NWA seems to be an obvious home for the potential regulation, conservation and management of the country's SWSAs. It would be constitutionally sensible as the mandate to realise everyone's right of access to sufficient water[163] is that of the Minister of Water and Sanitation "as the public trustee of the nation's water resources".[164] However, as seen above, the NWA currently focuses on protecting water as a 'resource' without extending its application to protecting the 'source' from where the resource originates. It currently presents very limited mechanisms to do this but current legislative reform being undertaken in the water sector seems to provide an opportune moment for SWSAs to finally receive much-desired attention.

The objectives for protecting SWSAs can easily be formulated by tweaking the current objectives prescribed in the NWA so as to widen their scope to area-based measures. The desired legal provisions would, as an initial step, require a workable definition for 'strategic water source areas', which would give a broad, general description of the area's features and characteristics (without being too prescriptive, bearing in mind the evolving nature of science). These areas would need to be formally declared under the NWA, based on the purpose and objectives thereof. An identification of threatening activities would need to be clearly spelt out, preferably in a set of regulations. Regulatory mechanisms for these activities would need to be developed in such a way that they ensure flexibility as each SWSA may have its own unique characteristics and features; and face different threats to varying degrees. A proactive approach is also critical to deal with both current and future activities within SWSAs. By setting out a standard in the NWA (together with a detailed policy on this standard) that must be met before allowing any identified activity to commence within an SWSA, government authorities (and prospective applicants) would be placed in a position where they would know from the outset that activities are *prima facie* prohibited, except if proven to have met the golden standard.

Without ensuring that the country's 'headwaters' are protected against threats, the South African government's countless attempts to otherwise ensure water security and water supply seem futile. Building more dams and managing demand will not provide South Africans with more water if SWSAs are not providing those dams with the necessary water to meet the increasing demand.

163 Section 27(1)(b) of the Constitution of the Republic of South Africa, 1996.
164 Section 3(1) of the NWA.



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