

Accounts for Strategic Water Source Areas: under development

National Natural Capital Accounting Forum
18 October 2022

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4. Overview of accounts for SWSAs: indicators and ways of visualising and summarising the results
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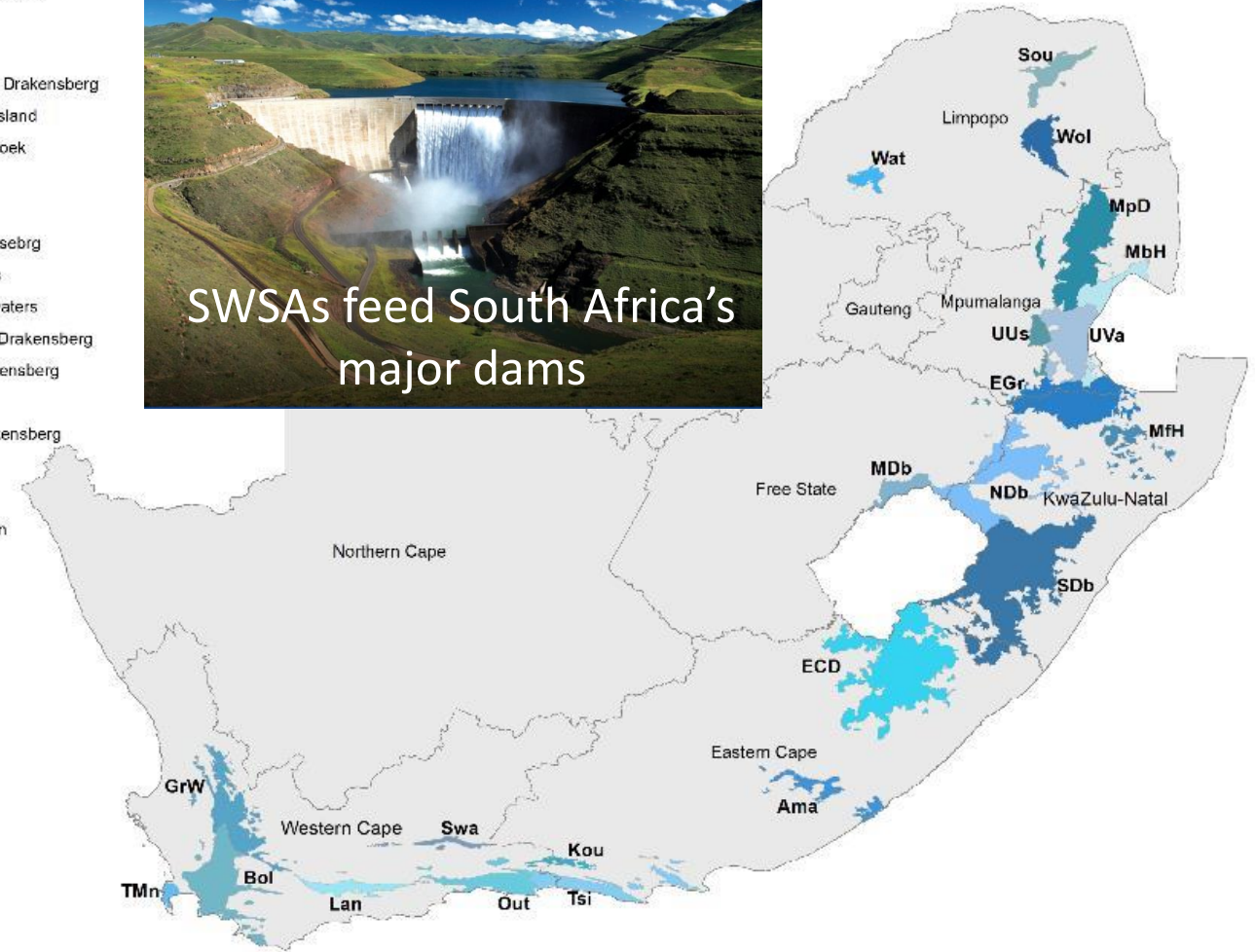
Strategic Water Source Areas – the 10% of land that delivers 50% of SA's water

SWSAs support **half the population** and **two thirds of the economy**, often in major urban centres some distance away.

They also provides 70% of water for **irrigation**.

SWSAs for surface water

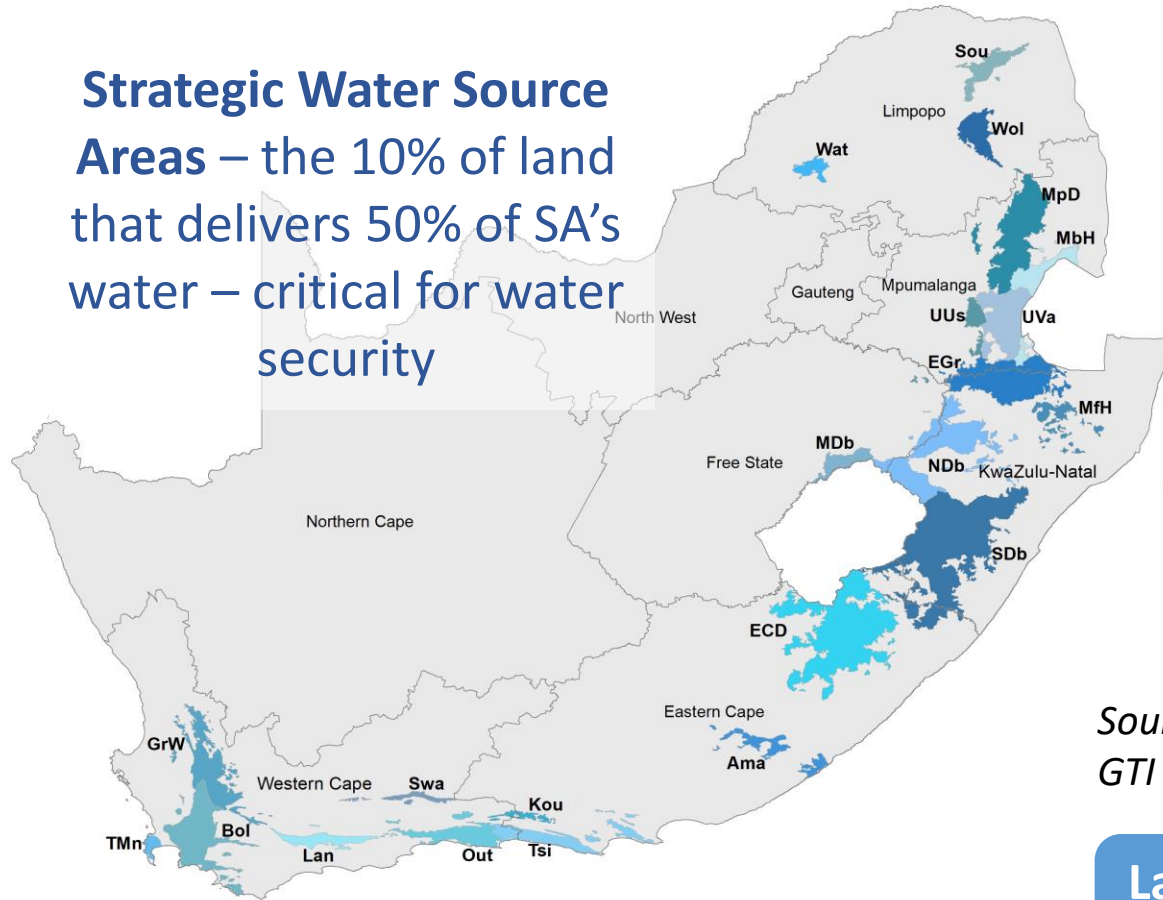
- Ama - Amatole
- Bol - Boland
- ECD - Eastern Cape Drakensberg
- Egr - Ekangala Grassland
- GrW - Groot Winterhoek
- Kou - Kouga
- Lan - Langeberg
- Mdb - Maloti Drakensberg
- MbH - Mbabane Hills
- MfH - Mfolozi Headwaters
- MpD - Mpumalanga Drakensberg
- NDb - Northern Drakensberg
- Out - Outeniqua
- SDb - Southern Drakensberg
- Sou - Soutpansberg
- Swa - Swartberg
- TMn - Table Mountain
- Tsi - Tsitsikamma
- Uus - Upper Usutu
- Uva - Upper Vaal
- Wat - Waterberg
- Wol - Wolkberg



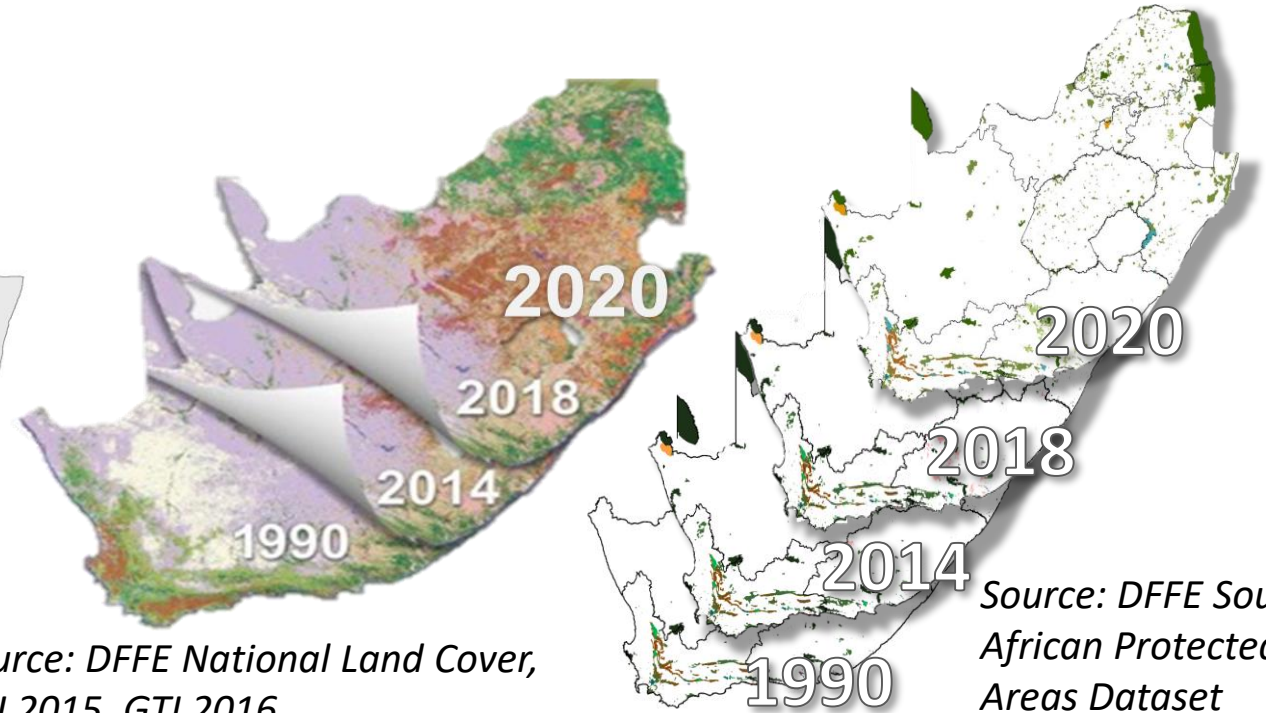
→ National ecological infrastructure assets for water security and food security

Accounts for Strategic Water Source Areas

Strategic Water Source Areas – the 10% of land that delivers 50% of SA's water – critical for water security



Source: Lotter & le Maitre, 2021



Source: DFFE National Land Cover, GTI 2015, GTI 2016

Source: DFFE South African Protected Areas Dataset

Land accounts for SWSAs, 1990 to 2020

Accounts for PA's in SWSAs, 1990 to 2020

What is the scope of the accounts?

- Accounts for SWSAs for surface water
- Ecosystem accounting area are the SWSA on **South Africa's mainland**
- Track change in SWSA over the period **1990 to 2020, in hectares**
- Accounting periods:
 - 1990 to 2014;
 - 2014 to 2018;
 - 2018 to 2020
- Compiled **for all SWSAs combined AND for each SWSA, disaggregated by:**
 - **Main types of** land cover classes
 - **Types** of protected areas as per NEMPAA
- Accounts are **spatially explicit** which allows us to integrate with other spatial information such as population census data, water management, water-related ecosystems like rivers and wetlands.

Extent of different land cover classes in SWSAs

Account table for land cover in all SWSA combined

Main land cover classes

Total area of SWSA in SA

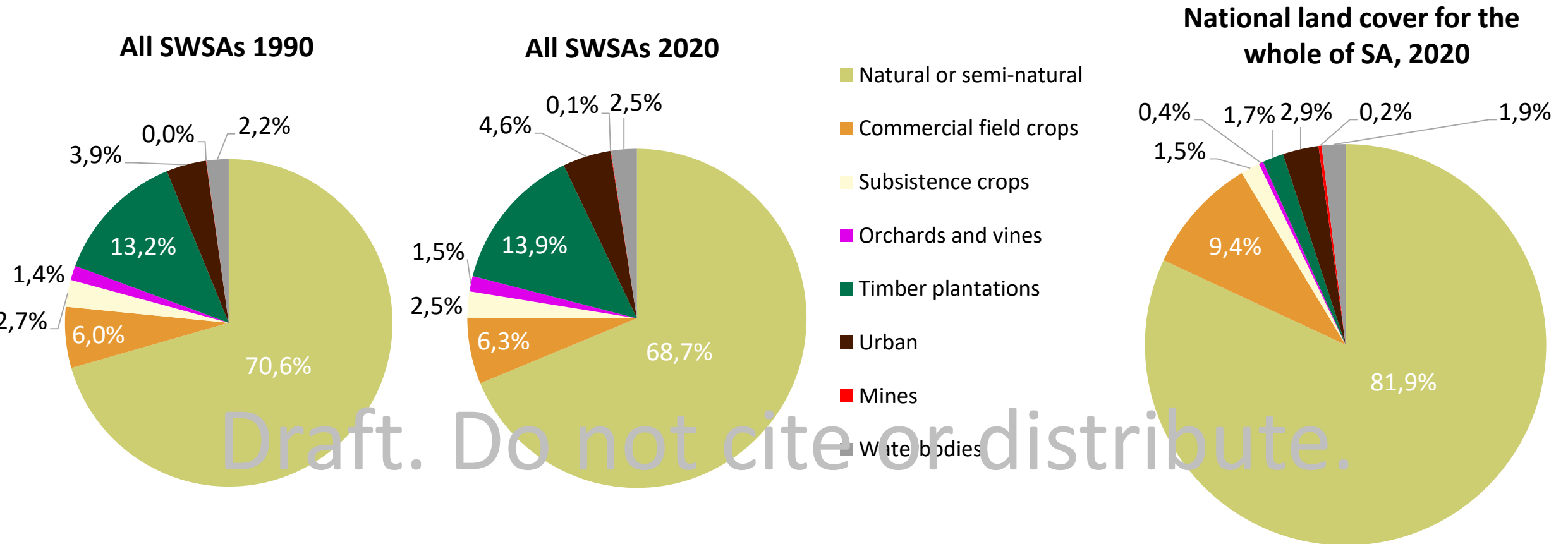
	Natural or semi-natural	Commercial field crops	Subsistence crops	Orchards and vines	Timber plantations	Urban	Mines	Water-bodies	Totals
Opening stock 1990	7 069 801	603 277	265 684	144 167	1 319 754	395 052	3 444	219 541	10 020 720
Total additions to stock	421 261	137 877	43 850	34 859	304 287	97 136	4 114	106 676	1 150 060
Total reductions in stock	-602 402	-107 942	-60 641	-32 300	-232 440	-31 659	-2 325	-80 151	1 150 060
Net change in stock	-181 141	29 935	-16 791	2 559	7 847	65 277	1 789	26 525	395 864
<i>Net change as % of opening</i>	-3%	5%	-6%	2%	5%	17%	52%	12%	
Unchanged (opening - reductions)	6 467 399	495 335	326 325	176 467	1 087 314	363 191	1 119	139 390	9 623 663
<i>Unchanged as % of opening</i>	91%	82%	77%	78%	82%	92%	32%	63%	
Spatial turnover (additions + reductions)	1 023 663	245 819	104 491	67 159	536 727	128 995	6 439	186 827	2 150 412
<i>Spatial turnover as % of opening</i>	14%	41%	39%	47%	41%	33%	190%	85%	
Closing stock 2020	6 888 660	633 212	248 893	146 726	1 391 601	524 047	8 233	246 066	10 020 720

Percentage of unchanged land cover classes in SWSAs

Change in the size of the land cover classes in SWSA

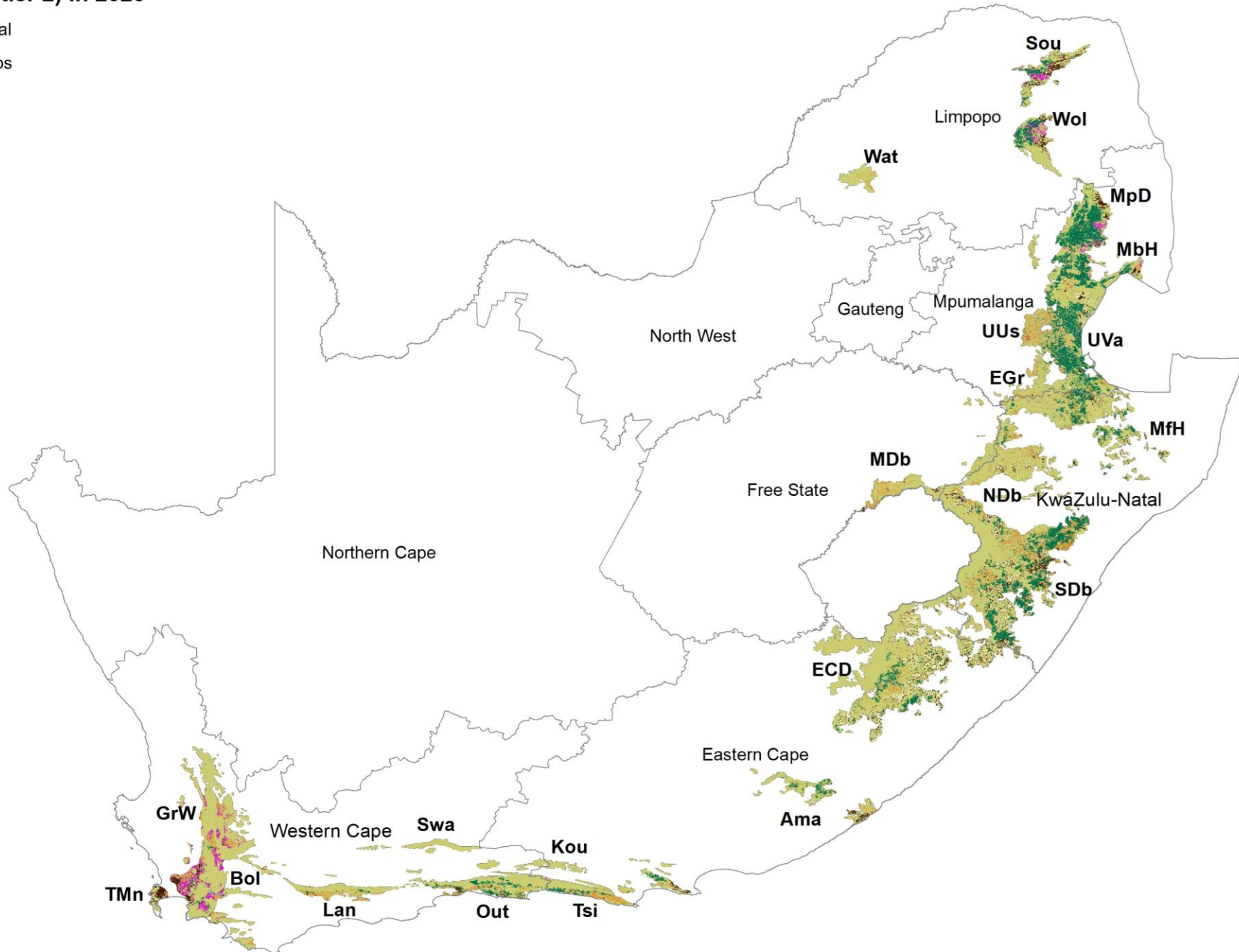
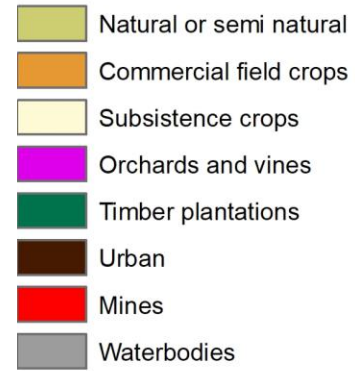
Spatial turnover in land cover classes in SWSAs

Proportion of land cover classes in all SWSA in 1990 and 2020



Year	Natural or semi-natural	Commercial field crops	Subsistence crops	Orchards and vines	Timber plantations	Urban	Mines	Waterbodies
1990	7 069 801	603 277	265 684	144 167	1 319 754	395 052	3 444	219 541
2014	7 029 767	614 457	286 338	166 724	1 322 046	406 907	4 229	190 252
2018	6 927 680	608 019	257 456	130 498	1 376 045	458 041	5 151	247 930
2020	6 888 660	633 212	248 893	146 726	1 391 601	460 329	5 233	246 066

National land cover (tier 2) in 2020

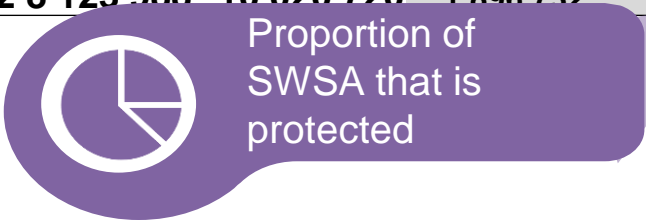
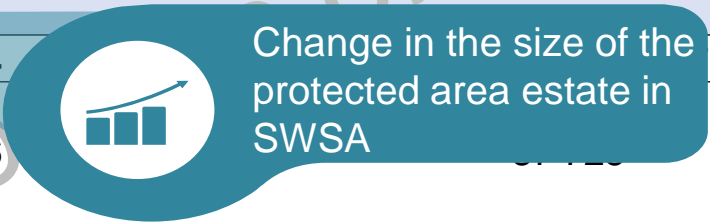




Account table of protected area accounts for all SWSAs combined

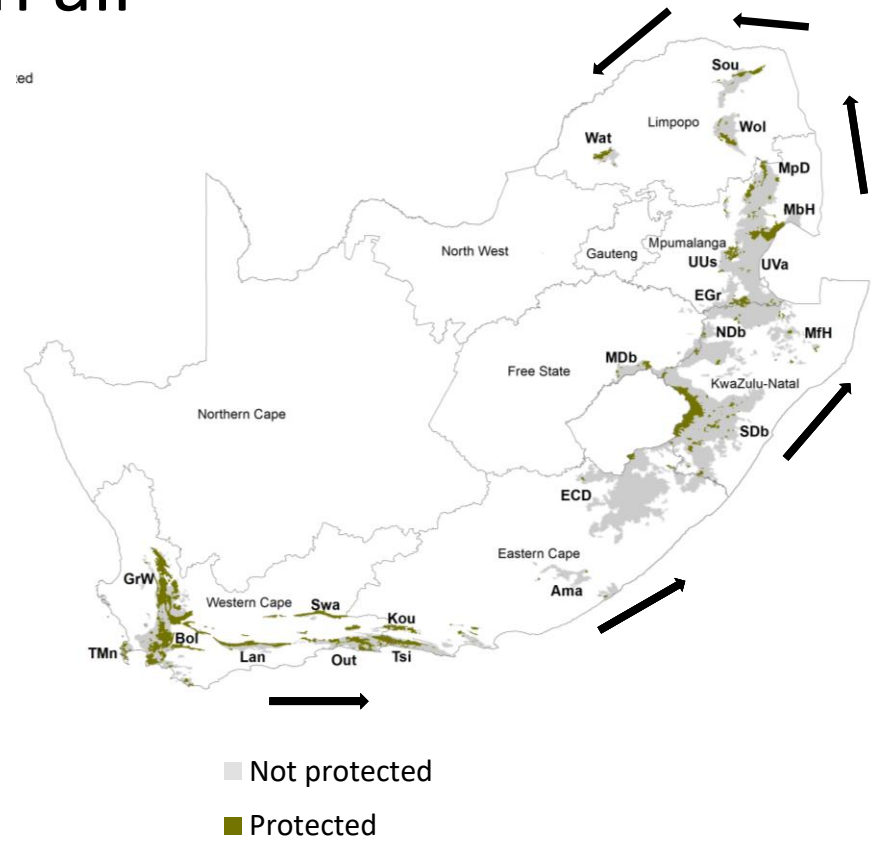
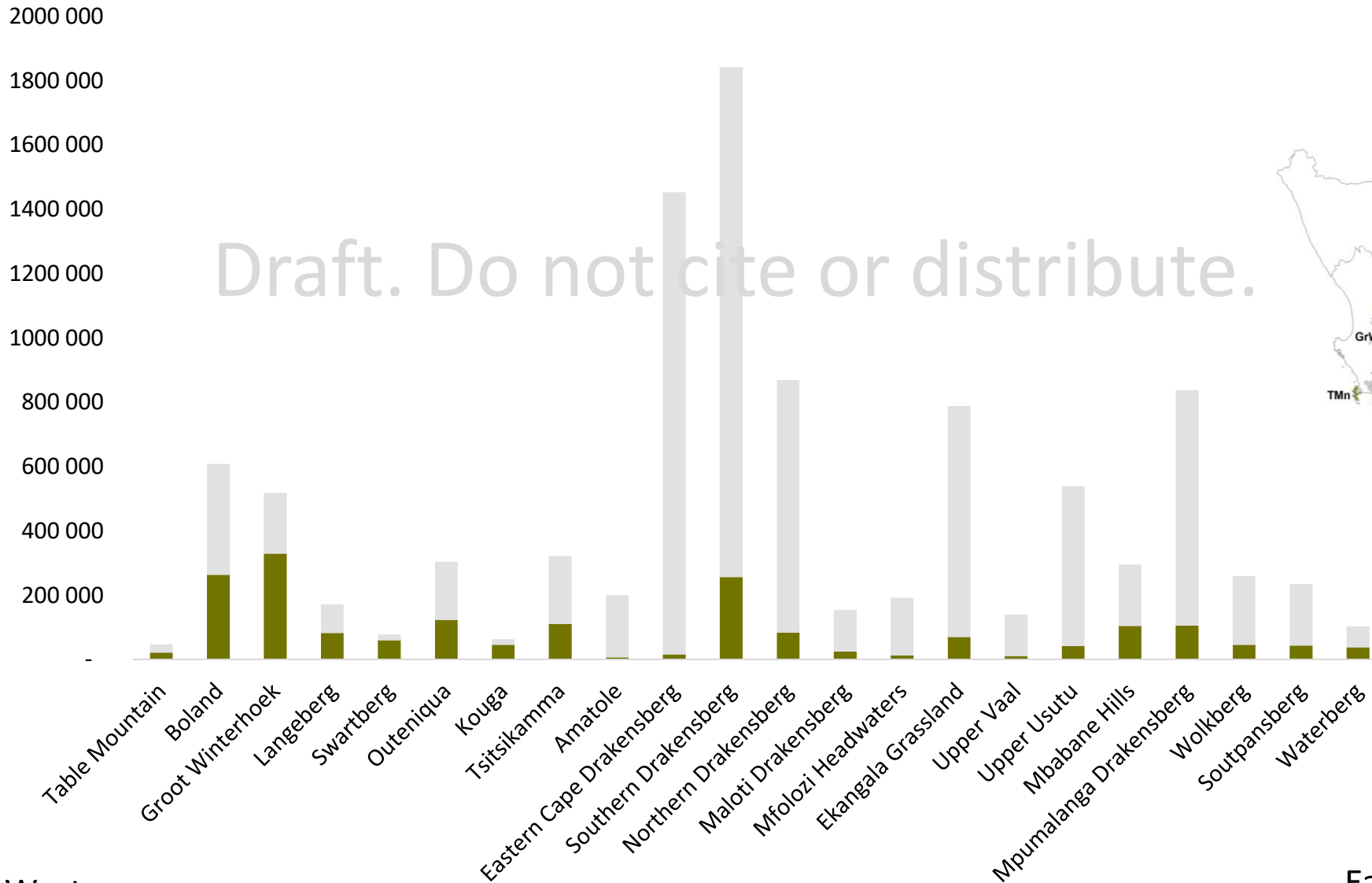


	National Park	Nature Reserve	Protected Environment	Forest Nature Reserve	Forest Wilderness Area	Mountain Catchment Area	World Heritage Site *	Not Protected	Total	Total protected (ha)	Total protected (%)
Opening stock 1990	151 622	517 740	11 603	106 173	243 523	363 253		8 626 806	10 020 720	1 393 914	14%
Net change in stock	43 559	170 427	101 483	17 481			14 657	-347 607	0	347 607	
Net change as % of opening	29%	33%	875%	16%				-1%			
Closing stock 2014	195 181	688 167	113 086	123 654	243 523	363 253	14 657	8 279 199	10 020 720	1 741 521	17%
Net change in stock		55 037	53 099					-108 136	0	108 136	
Net change as % of opening		8%	47%					-1%			
Closing stock 2018	195 181	743 204	166 185	123 654				1 063	10 020 720	1 849 657	18%
Total additions to stock		7 804		1 546					47 075		
Total reductions in stock								-47 075	47 075		
Net change in stock		7 804		1 546			37 725	-47 075	0	47 075	
Net change as % of opening		1%		1%			257%	-1%			
Closing stock 2020	195 181	751 008	166 185	125 200	243 523	363 253	52 382	8 123 988	10 020 720	1 896 732	19%



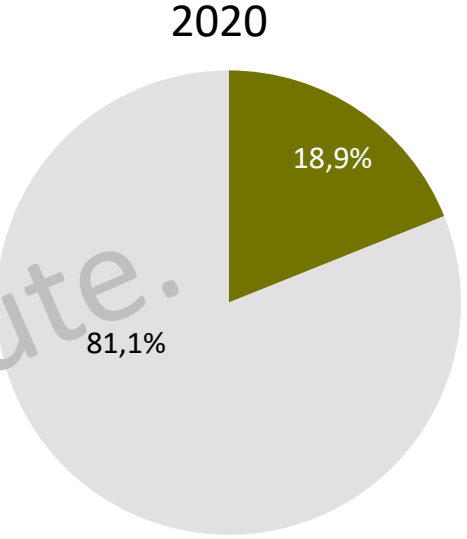
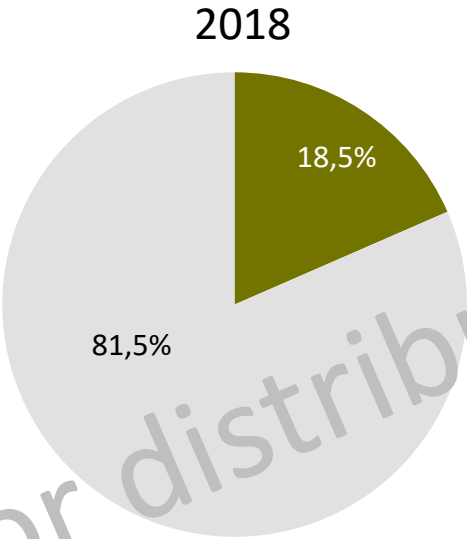
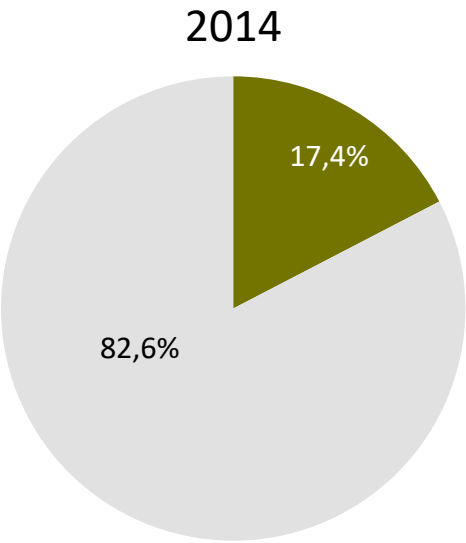
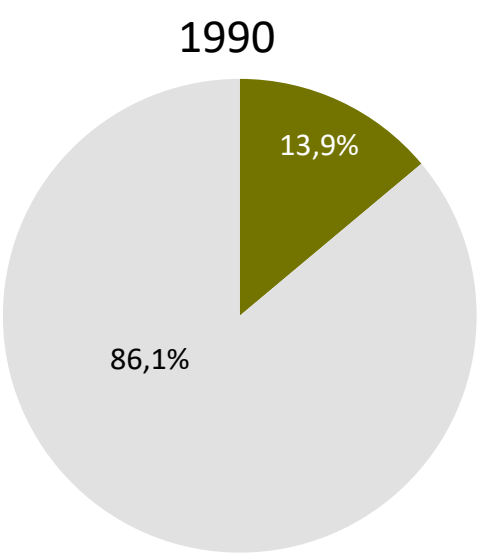
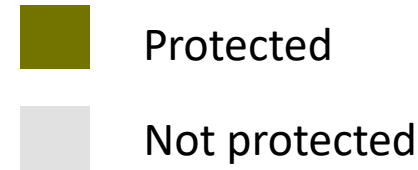
Total protected and not protected area in all SWSAs at the end of 2020 (ha)

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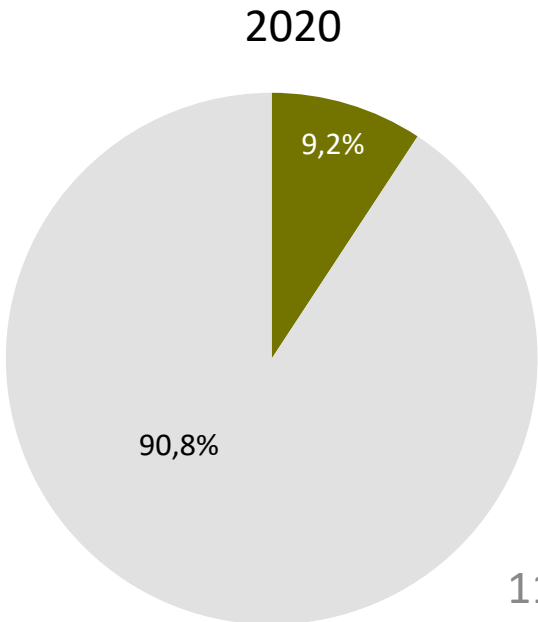
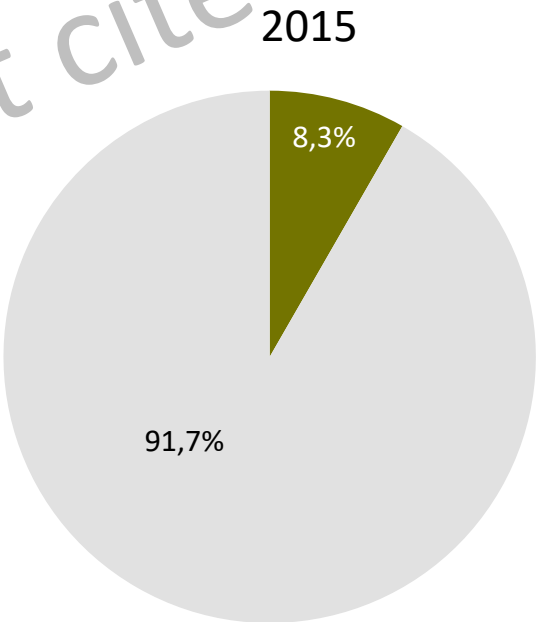
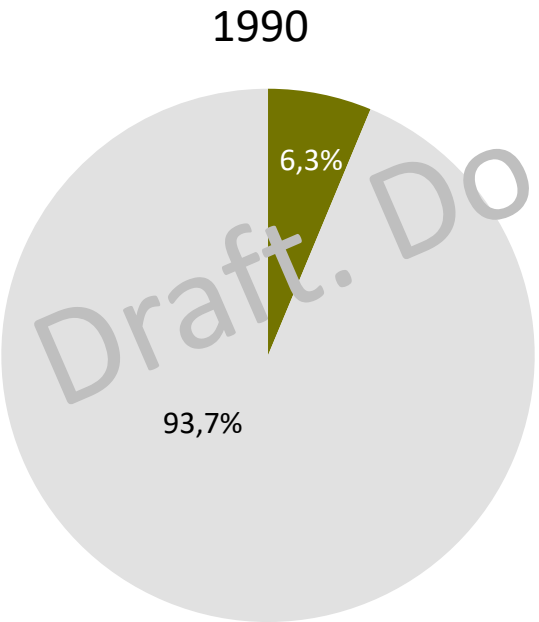


Proportion protected and not protected in all SWSAs and whole of South Africa

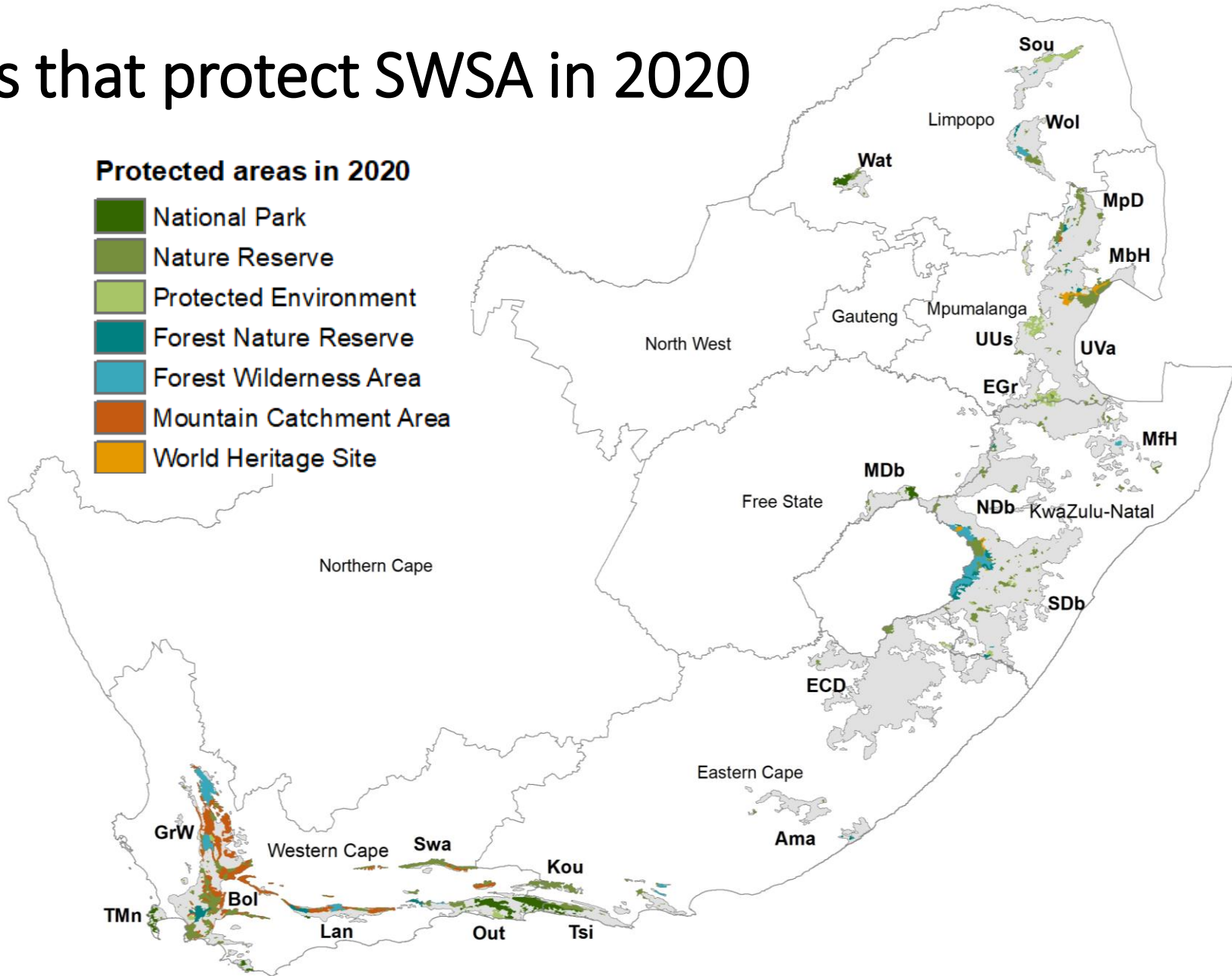
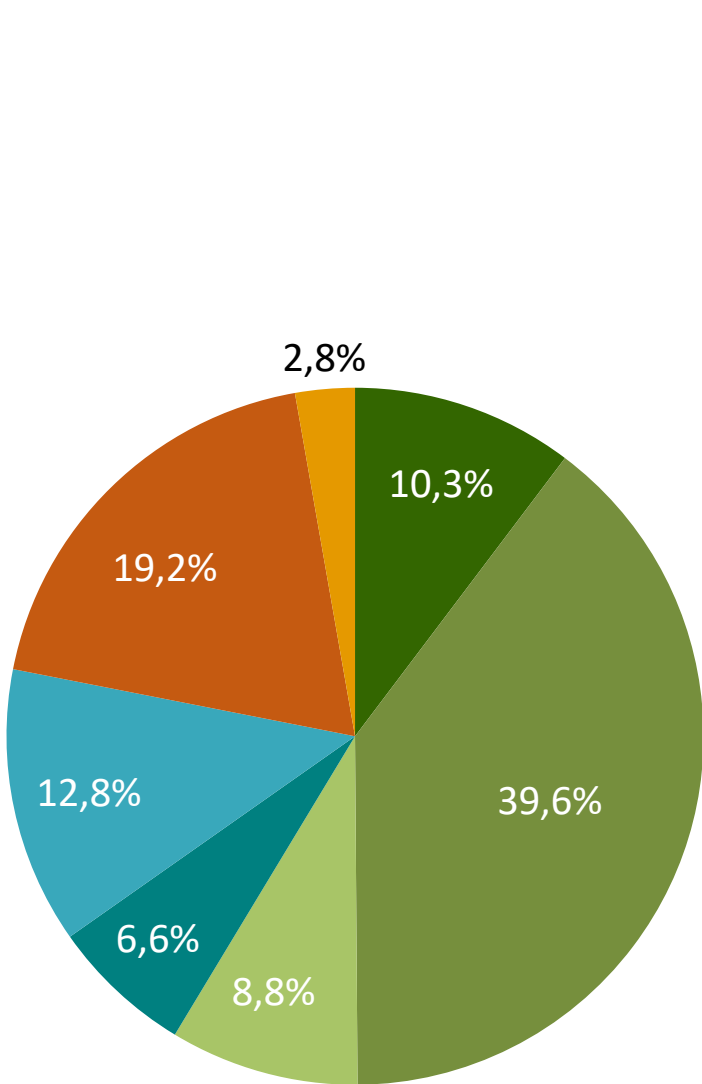
All SWSA



Whole of South Africa

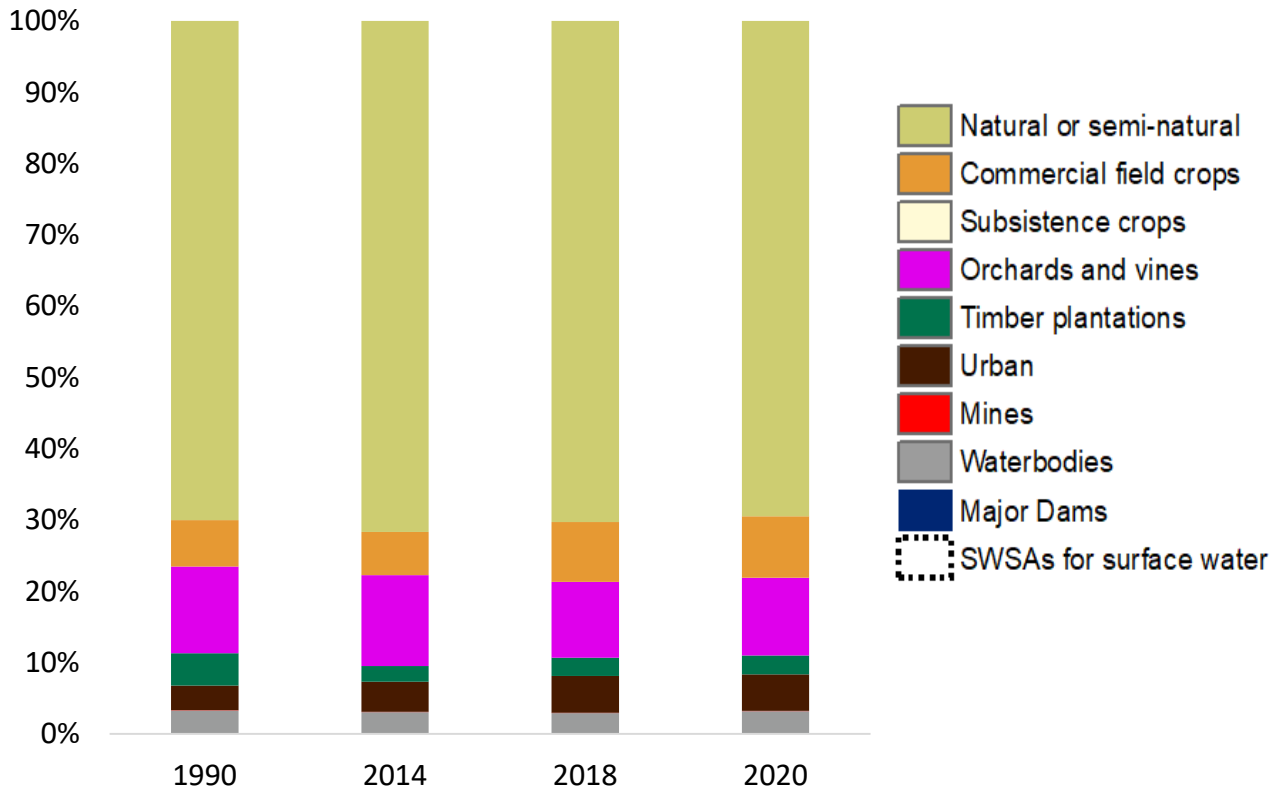


Types of protected areas that protect SWSA in 2020

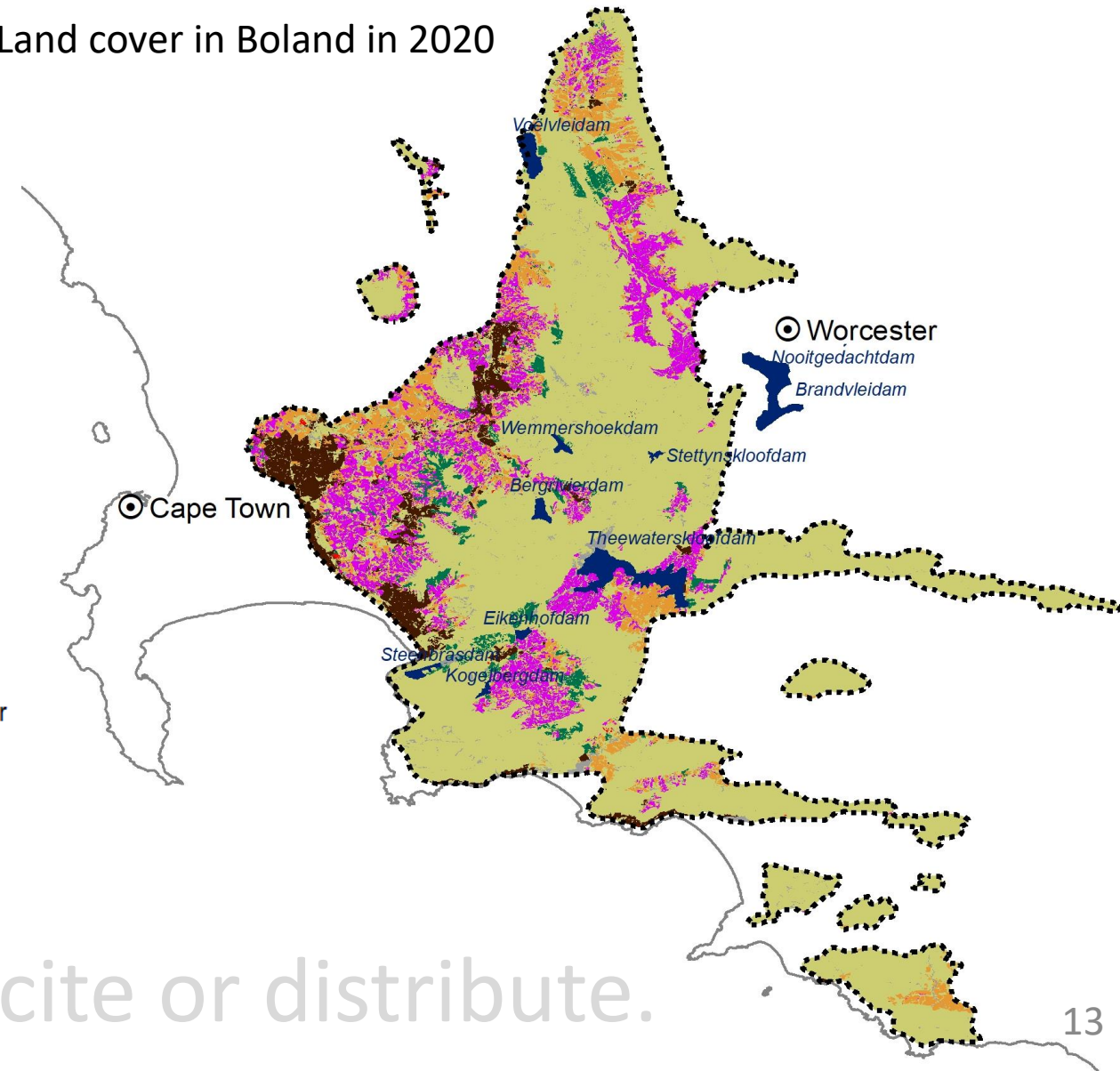


Land accounts in Boland: composition

Proportion of land use classes in Boland at the end of each accounting period, 1990 to 2020 (ha)

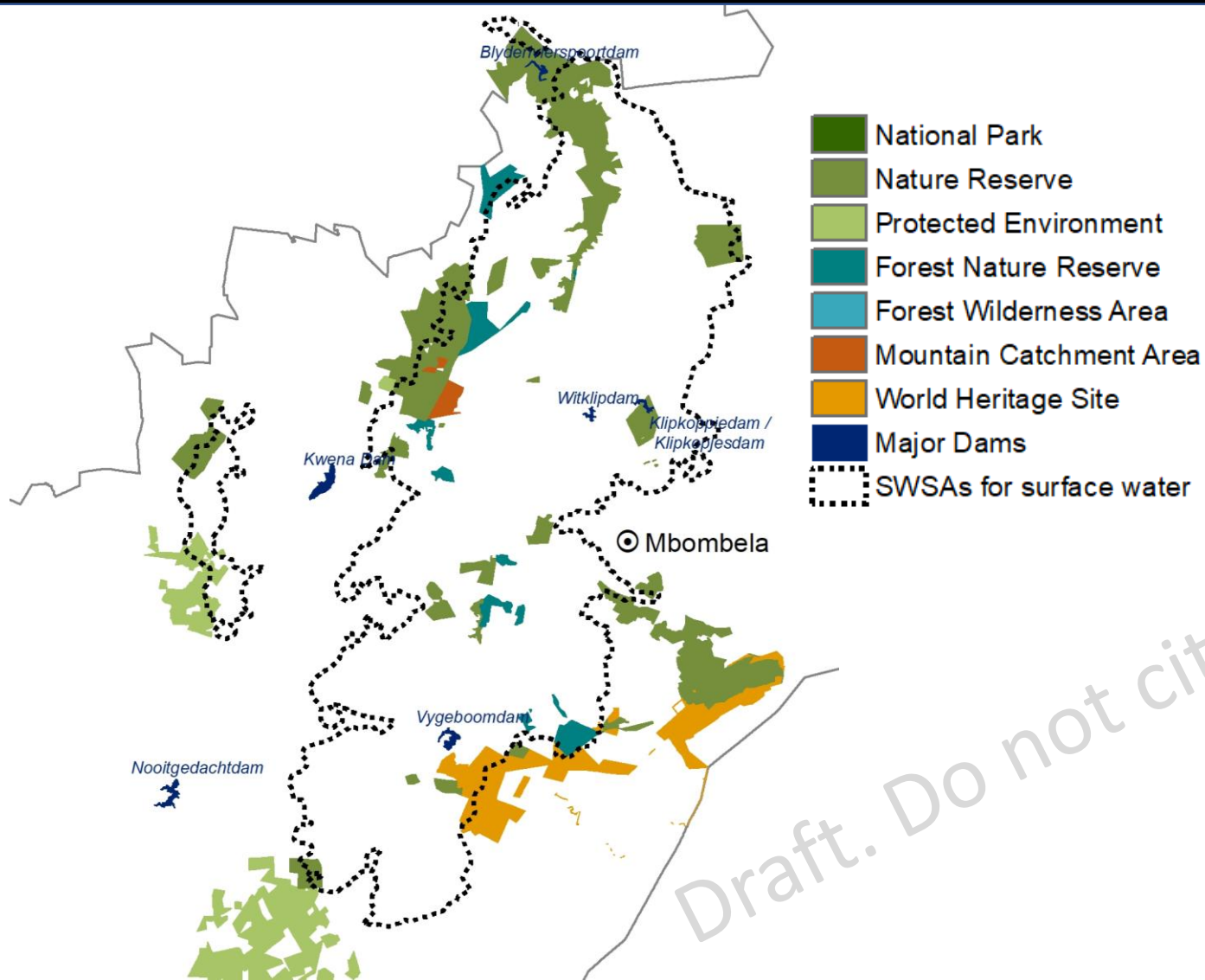


Land cover in Boland in 2020

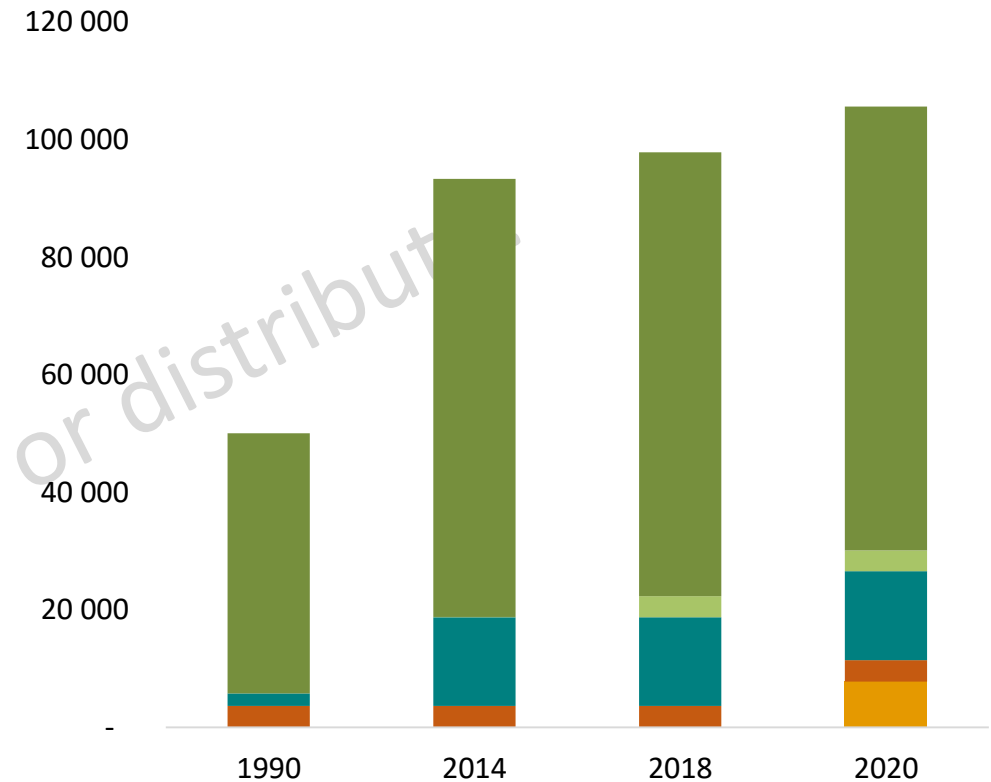


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Accounts for PAs in Mpumalanga Drakensburg SWSA: composition



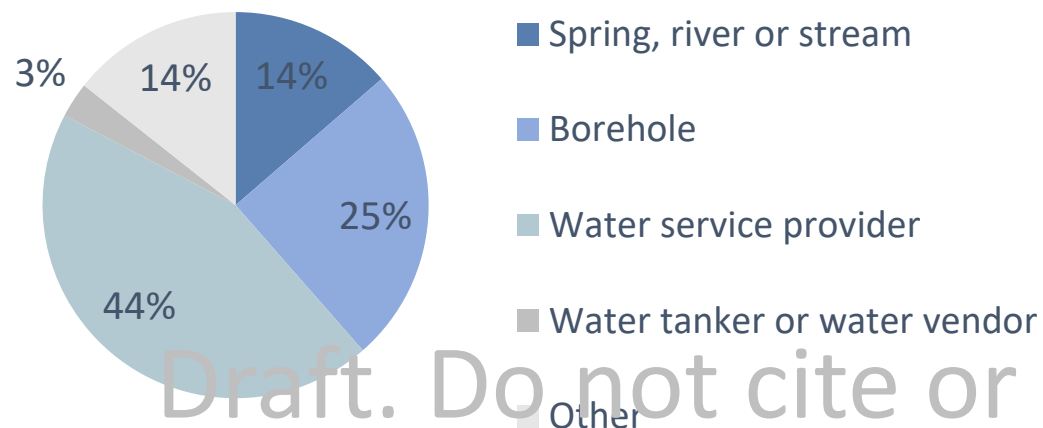
Cumulative extent of the protected area estate in Mpumalanga Drakensburg by type of protected area at the end of each accounting period, based on the South African Protected Areas Database (ha)



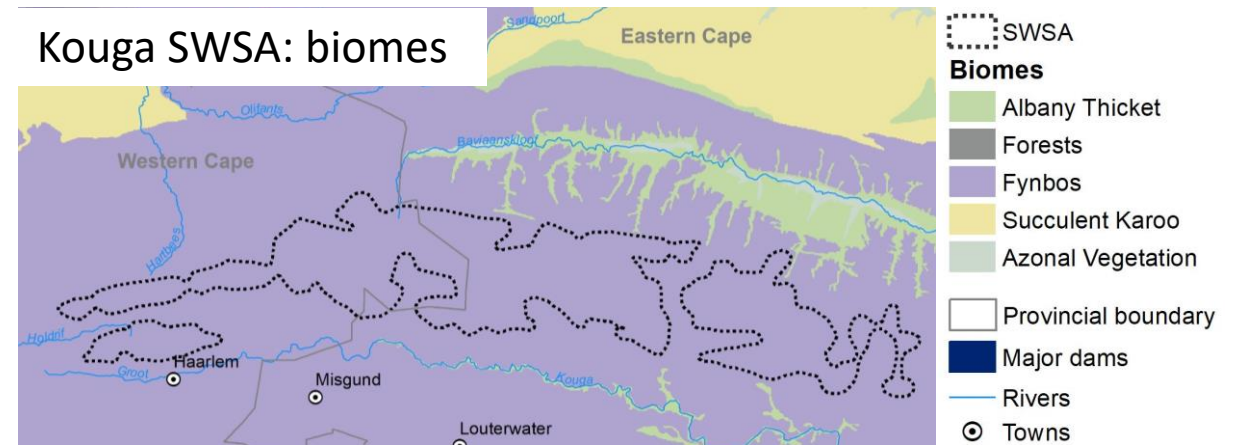
In addition to information from accounts...

... relevant associated information is provided as context for each SWSA

Access to different sources of water in Groot Winterhoek SWSA



Kouga SWSA: biomes



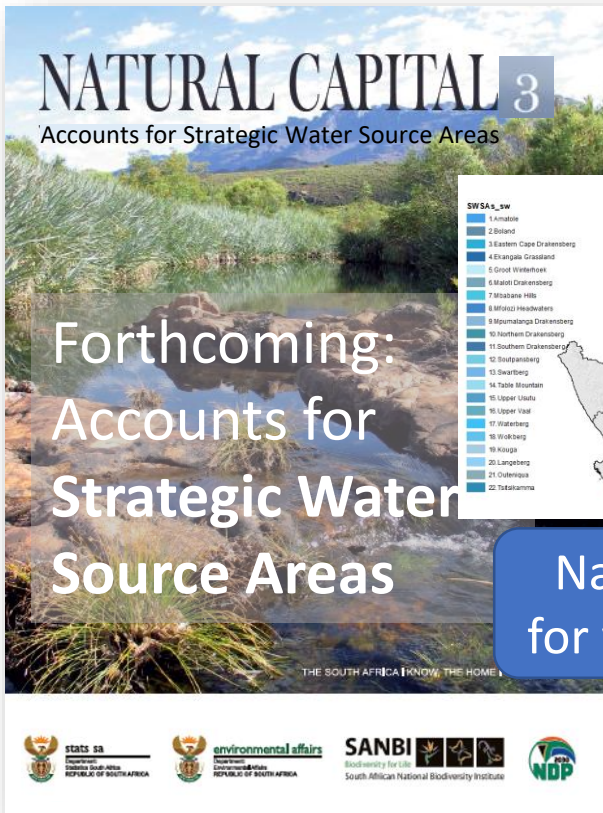
Amathole SWSA: District municipalities



Groot Winterhoek SWSA

Total population: 163 876

Population density: 31.6



Accounts for SWSAs

Intend to publish in Stats SA's Natural Capital Series by March 2023

Doing so requires that:

National assets
for water security

- A Technical Working Group has been established

Completed. SANBI chairs

- The account compilation process involved a validation workshop

Completed in June 2022

- A discussion document and sources and methods report are currently being compiled (SANBI leading their development)

Under development. Draft due Oct 2022. To be reviewed by TWG.

- The final draft is submitted to Stats SA for editing and approval

To be submitted Dec 2022

