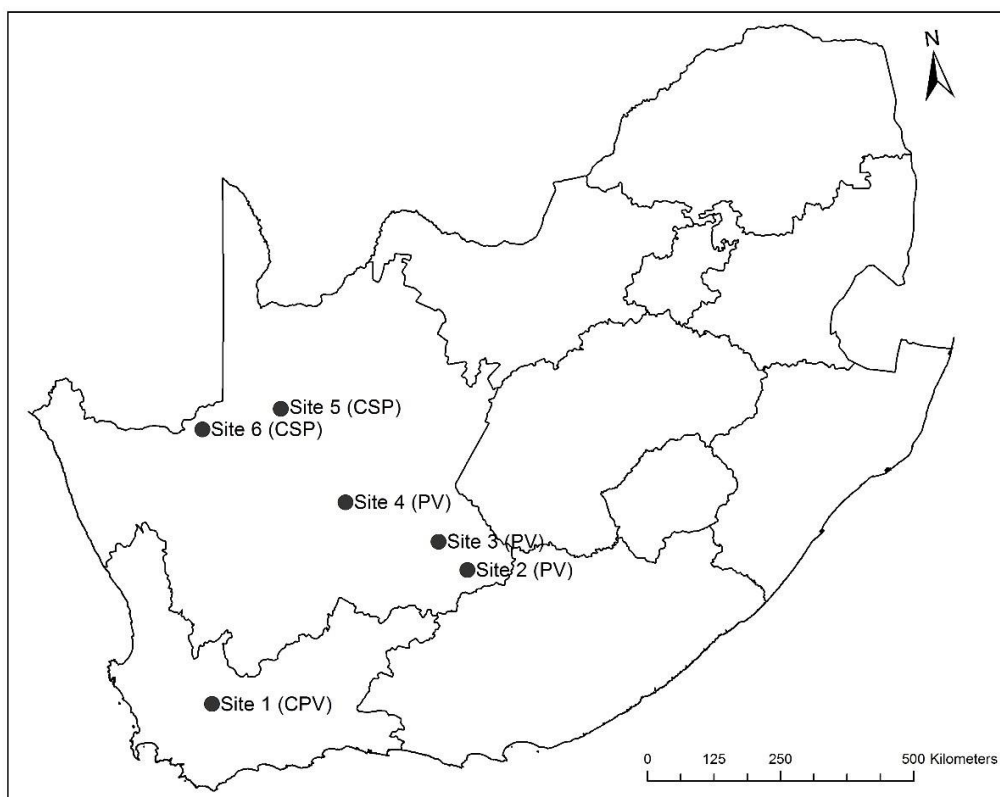


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CPV, concentrated photovoltaic; PV, photovoltaic; CSP, concentrating solar power

Figure 1: The locations of the solar developments visited during the field trip. At the time of the site visits, Sites 4 and 6 were under construction, Sites 1, 2 and 3 were in full or partial operation, and Site 5 was being commissioned.

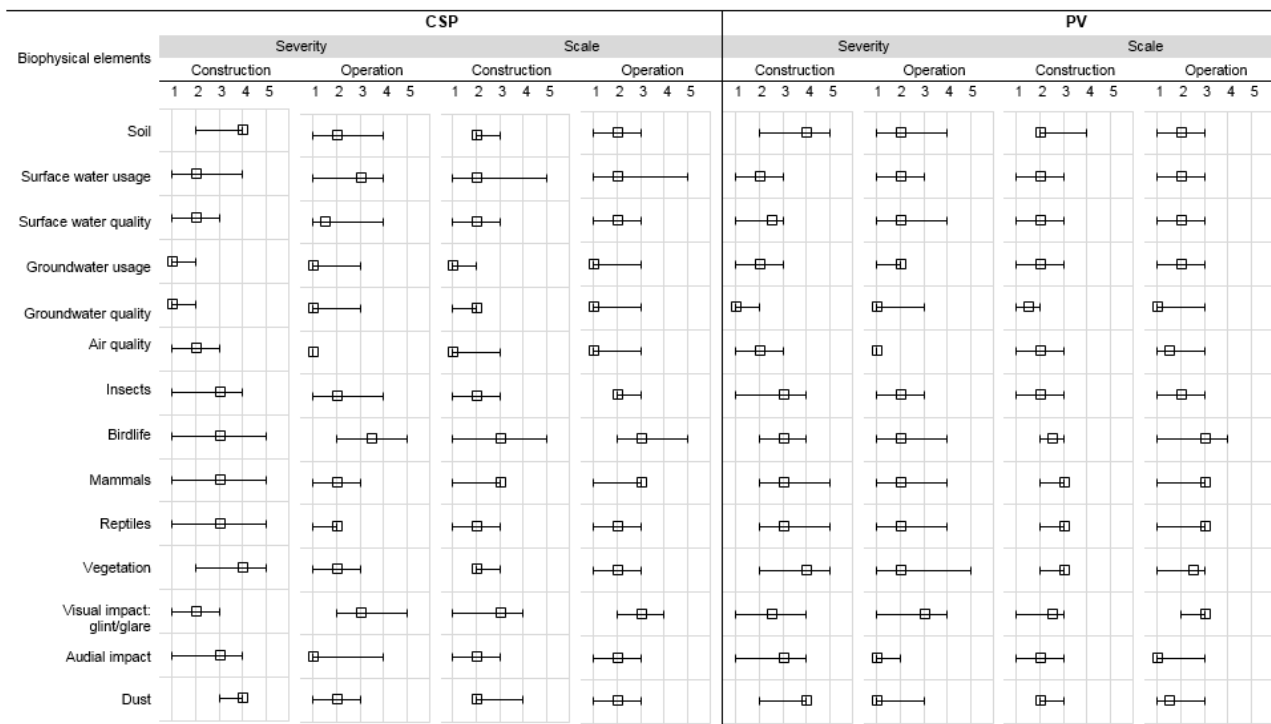


Figure 2: The median and range (minimum to maximum) of ratings obtained for the severity and physical scale of impacts on various biophysical elements during construction and operation of concentrating solar power (CSP; $n=10$) and photovoltaic (PV; $n=13$) developments.

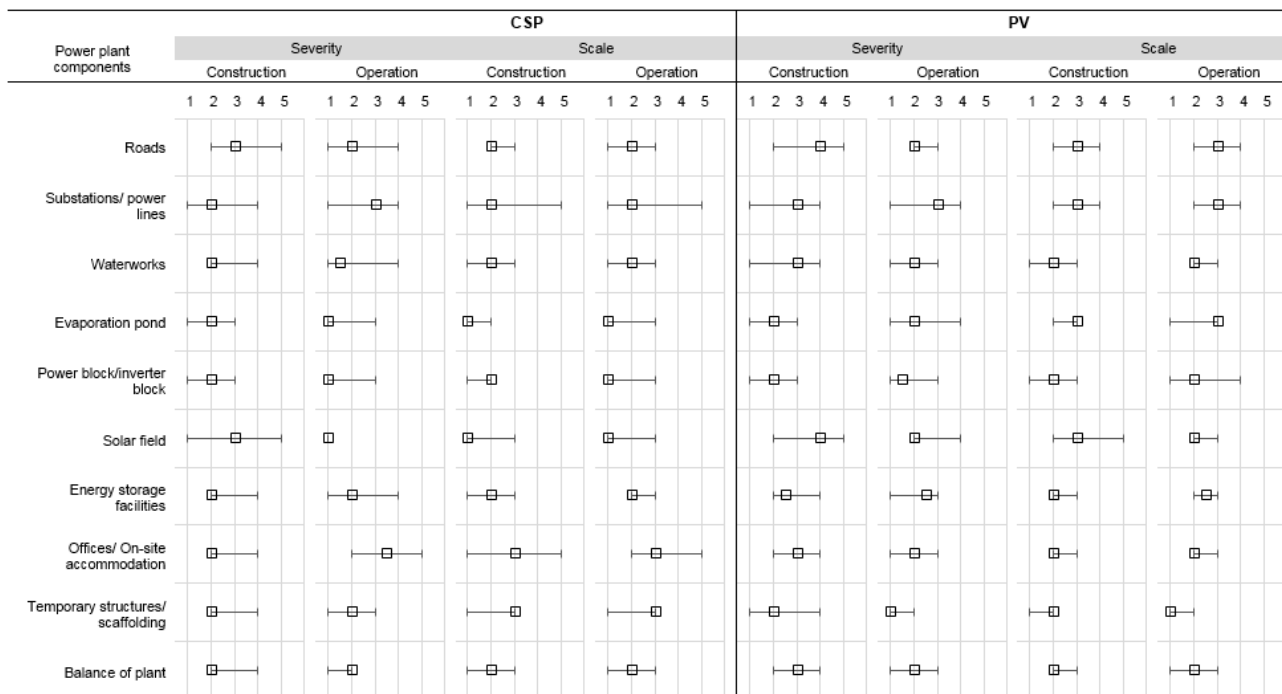


Figure 3: The median and range (minimum to maximum) of ratings obtained for the severity and physical scale of impacts from various power plant components during construction and operation of concentrating solar power (CSP; $n=10$) and photovoltaic (PV; $n=13$) developments.

Table 1: A summary of the spatial data sets used for the spatial analysis of the footprint of solar power developments with a short description of each and the respective sources

Title of data set and year published Description	Source and reference
<p>South African Renewable Energy EIA Application Database Q1 2016</p> <p>Project-level spatial data regarding environmental impact assessment (EIA) applications received for renewable energy developments.</p>	1
<p>National Vegetation Map (Vegmap) 2012</p> <p>An update to the 2006 version of the same spatial data set, describing floristically based vegetation units of South Africa, Lesotho and Swaziland.</p>	2
<p>South African Protected Areas Data Base Q1 2016</p> <p>Spatial data set of the conservation estate of South Africa, including both formally protected areas and areas with a lower level of protection.</p>	3
<p>Important Bird Areas 2015</p> <p>The Important Bird Area Programme is an International BirdLife programme to conserve important bird habitats. These areas are determined based on guidelines and criteria for species occurring in the area.</p>	4
<p>National Protected Areas Expansion Strategy: Focus areas for protected area expansion 2010</p> <p>Areas identified through a systematic biodiversity planning process to determine large, unfragmented and intact areas very important for ecological persistence and biodiversity presentation.</p>	5
<p>Strategic Water Source Areas 2013</p> <p>Strategic water source areas are identified for South Africa, Lesotho and Swaziland and are areas which supply a disproportionate amount of annual run-off to geographical regions of interest.</p>	6
<p>DEA Solar PV SEA Phase 1 Study Areas</p> <p>Renewable energy development zones developed to indicate areas with the highest photovoltaic (PV) power development potential. These areas were identified taking into account the following: network losses and capacity, social need, solar resource availability, protected areas, special land uses, and geographical features such as slope.</p>	7

Table 2: The 10 most impacted vegetation types⁸ by approved solar power environmental impact assessment (EIA) applications and projects, which were preferred bidders throughout the first three rounds of the Renewable Energy Independent Power Producers Procurement Programme. Vegetation types are primarily grouped according to the associated bioregions and secondarily from large to small for total area of approved EIA applications for preferred bidders.

Vegetation type	Total area of approved solar power project EIA applications (km ²)		Associated bioregion
	All	Preferred bidders	
Bushmanland Arid Grassland	1159.5	256.3	Bushmanland bioregion (NK)
Kalahari Karroid Shrubland	529.4	128.3	Bushmanland bioregion (NK)
Bushmanland Basin Shrubland	1161.5	116.4	Bushmanland bioregion (NK)
Lower Gariep Broken Veld	87.6	14.5	Bushmanland bioregion (NK)
Northern Upper Karoo	643.3	153.9	Upper Karoo Bioregion (NK)
Eastern Upper Karoo	430.3	19.7	Upper Karoo Bioregion (NK)
Gordonia Duneveld	675.0	93.5	Kalahari Duneveld Bioregion (S)
Kimberley Thornveld	489.7	39.9	Eastern Kalahari Bushveld Bioregion (S)
Olifantshoek Plains Thornveld	211.8	37.7	Eastern Kalahari Bushveld Bioregion (S)
Kathu Bushveld	152.2	34.4	Eastern Kalahari Bushveld Bioregion (S)

NK, Nama-Karoo; S, Savanna

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