




Value of South Australia's National Parks and Reserves

Study 2: Recreational and wellbeing benefits
of metropolitan parks summary report

A man and a woman are hiking on a dirt trail through green bushes. The woman is in the foreground, wearing a white tank top, a colorful patterned shirt, and denim shorts. The man is slightly behind her, wearing a blue button-down shirt and khaki shorts. They are both wearing backpacks. In the background, there is a body of water, a large hill, and a clear blue sky.

Definition of ‘metropolitan’

In this study, ‘metropolitan’ encompasses the city of Adelaide, its suburbs, and nearby regions, including the Adelaide Hills, where the major city’s economic and social influence extends. This definition aligns with the broader understanding of a ‘metropolis’ as the core city and its surrounding areas.

First Nations acknowledgment

The Department for Environment and Water acknowledges Aboriginal people as the First Peoples and Nations of the lands and waters we live and work upon and we pay our respects to their Elders past, present and emerging. We acknowledge and respect the deep spiritual connection and the relationship that Aboriginal and Torres Strait Islander people have to Country. The Department works in partnership with the First Peoples of South Australia and supports their Nations to take a leading role in caring for their Country.

Executive summary

Scientific evidence unequivocally shows that spending time in nature is good for us – it improves our physical and mental health, cognitive abilities, and community connections.

To better understand how Adelaide's metropolitan national parks and reserves contribute to health and wellbeing, the Department for Environment and Water (DEW) commissioned a study in collaboration with the University of Adelaide: The Value of South Australia's National Parks and Reserves Study 2: Recreational and Wellbeing Benefits of Metropolitan Parks.

This study considers the health and wellbeing benefits of parks visitation in the Adelaide metropolitan region, examining visitor use patterns, self-reported health scores, and travel estimates to offer insights into the health benefits parks offer to visitors compared to non-visitors.

Investigations found that Adelaide's metropolitan parks and reserves are highly accessible, with most residents living within a 30-minute drive. The study conclusively found that distance to a park was the biggest influencing factor to park visitation – in general, residents living closer to metropolitan parks and reserves visit them more frequently than those who live further away.

Findings also show that people from disadvantaged socioeconomic groups visit parks less frequently because they have further to travel to access parks. Where low socio-economic groups live in close proximity to park their frequency of visits is similar to higher socio-economic groups living close to parks.

There is a noticeable difference in health outcomes between individuals who visit parks and those who do not. On average, park visitors reported 4% better health scores than those who do not visit parks.

The study equated difference in health between parks visitors and non-visitors in economic terms, with potential avoided public health expenditure on chronic diseases in South Australia estimated at \$140 million in the benchmark year.

The evidence in this study provides encouraging insights on the health advantages of visiting South Australia's national parks and reserves. The study highlights a clear relationship between park visits and improved health, although the causes for this difference are many and complex.

The findings of this peer-reviewed study contribute to the evidence base on how contact with nature supports population health and wellbeing.

Pre-COVID-19 benchmark data

The study examined park visitation, socio-economic factors, and health outcomes using diverse datasets, with a specific emphasis on park visitation data from 2018-19 (McGregor Tan). The 2018-19 timeframe serves as the benchmark year for broader investigations into the value of SA's parks and reserves, providing insights into pre-COVID-19 pandemic park visitor trends and benefits.

Introduction

South Australia's national parks and reserves are a highly valued part of our natural landscape, offering protection for biodiversity and safeguarding our culturally important sites. The Department for Environment and Water (DEW) collaborated with the University of Adelaide to increase the understanding of the health and wellbeing benefits through access to our parks.

A growing body of science shows the multiple pathways through which a biodiverse environment supports human health (WHO, 2015). Research has found that exposure to environmental biodiversity is linked to the development of a well-functioning immune system (Roslund et al. 2020, 2021). These studies on biodiversity interventions found that children exposed to forest biodiversity have improved immune health within one month of exposure, with lasting benefits remaining even after 2 years.

Other studies concluded that the environmental microbiota are an important element in the health benefits we can derive from contact with nature, particularly emphasizing the importance of providing young children raised in urban areas with access to parks, gardens, urban farms, and other green spaces (Flandroy, 2018). Connection to healthy ecosystems may be key to disease prevention and should be viewed as a fundamental pillar of a cost-effective healthcare strategy (von Hertzen et al., 2015).

To better understand how Adelaide's metropolitan national parks and reserves contribute to health and wellbeing, the Department for Environment and Water collaborated with the University of Adelaide to conduct a study: *The Value of South Australia's National Parks and Reserves Study 2: Recreational and Wellbeing Benefits of Metropolitan Parks*.

This research focused on Adelaide's metropolitan national parks and reserves, exploring their contributions to health and wellbeing. The study examined visitor use patterns, self-reported health scores, and travel estimates to compare the health benefits of parks for visitors and non-visitors.

The study's findings contribute to the evidence base on how contact with nature supports population health and wellbeing, aligning with the Healthy Parks Healthy People South Australia strategy (2021-2026),

a collaboration between DEW and Preventative Health SA to enhance accessibility and equity in parks and green spaces, ultimately improving the health and wellbeing of all South Australians.

The study underlines the value of our national parks and reserves to South Australia's social, environmental, and economic wellbeing. It builds on our prior study [assessing economic benefits of regional parks](#), which amounted to \$374 million per year.

SA's national parks and reserves are highly valued



99%

of South Australians say parks are important to them



8/10

South Australians visited a national park in the study's benchmark year



Economic value of SA's regional parks and reserves

\$374M
to the SA economy.

SNAPSHOT

key findings

Park visitor vs.
non-park visitor
health gap



On average,
parks visitors are

4%
healthier
than those who do
not visit parks

Potential
avoided public
health costs



\$140 M
Potential avoided
health costs

Proximity to
metro parks
and reserves



Closer
proximity to
parks increases
visitation and
improves
health equity

Approach to the study

This study considers health and wellbeing benefits of parks visitation across the Adelaide metropolitan region with a focus on accessibility of parks, health of visitors compared with non-visitors, and potential avoided healthcare costs.

This health and wellbeing study continues our efforts to uncover the full economic picture of South Australia's parks and reserves.

The study examined visitor use patterns, self-reported health scores, and travel estimates to offer insights into the health benefits parks offer to visitors compared to non-visitors, and the health and wellbeing-related economic benefits potentially attributable to parks visitation across the Adelaide metropolitan region.

This was achieved by analysing park visitor use patterns through mobility data; self-reported health scores measured annually via visitor surveys; and difference in health and wealth by different sectors of the community using their Index of Relative Socio-economic Disadvantage (IRSD) to estimate potential avoided healthcare costs for different IRSD groups.

The study focused on the 20 most popular national parks and reserves in metropolitan Adelaide in the benchmark year.

Technical information

The study was conducted in partnership with the University of Adelaide and commissioned by the Department for Environment and Water, and peer reviewed by Thilak Mallawaarachchi Honorary Associate Professor, University of Queensland. This study builds upon a Department for Environment and Water study of mobility data.

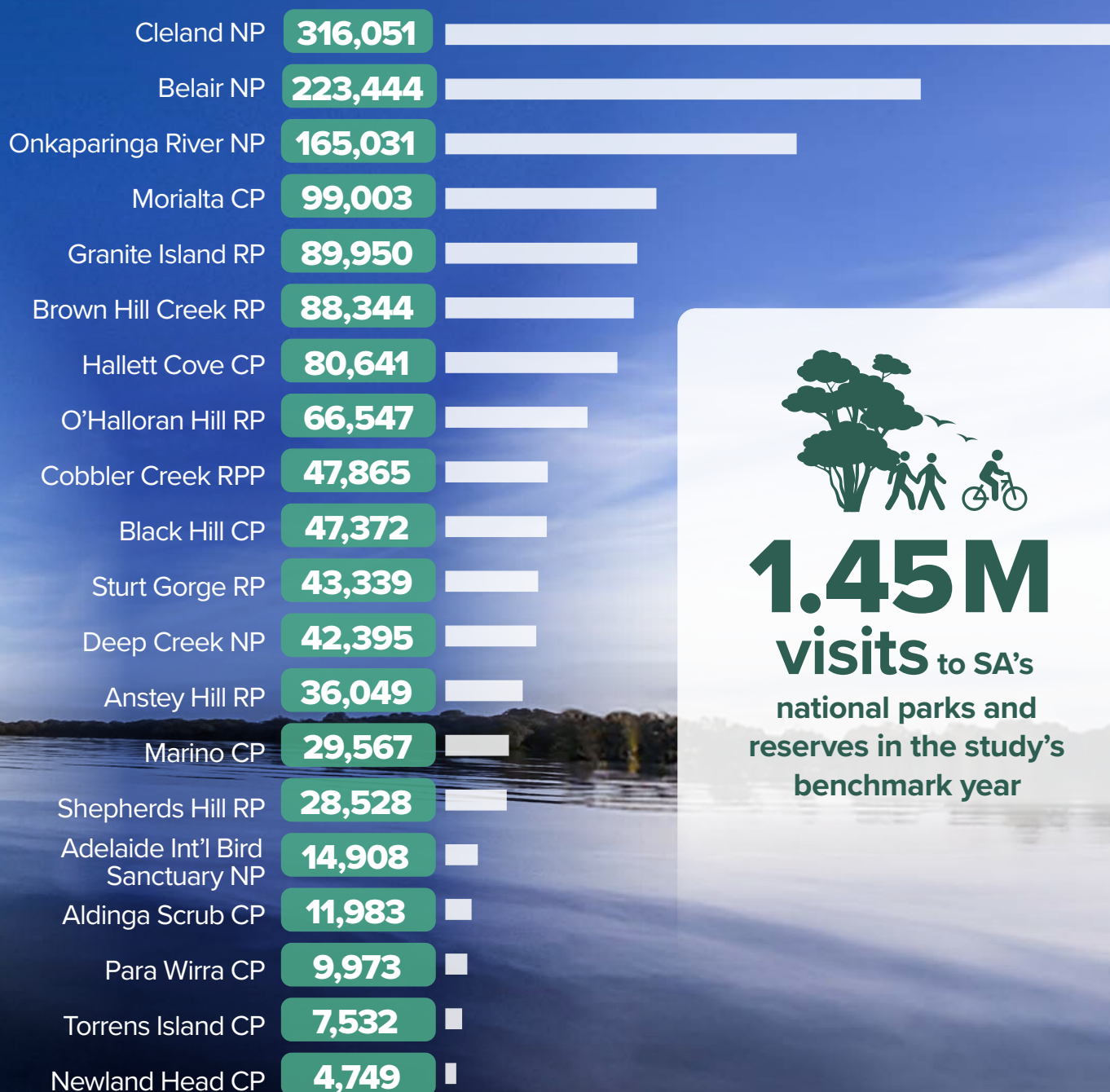
For further information on recreation and wellbeing values of parks see the University of Adelaide report: Adam Loch, John MacLean and Patrick O'Connor (2023). *Recreational and Wellbeing Benefits of Metropolitan Parks; Willingness to Pay and Avoided Health Costs associated with Adelaide Metropolitan Parks*, University of Adelaide.



Focus on 20 most popular South Australian metropolitan national parks and reserves

This study modelled estimated numbers of visits for the 20 most popular metropolitan parks and reserves sites to determine average parks visitor use in the study's benchmark year.

Estimate of visits in benchmark year

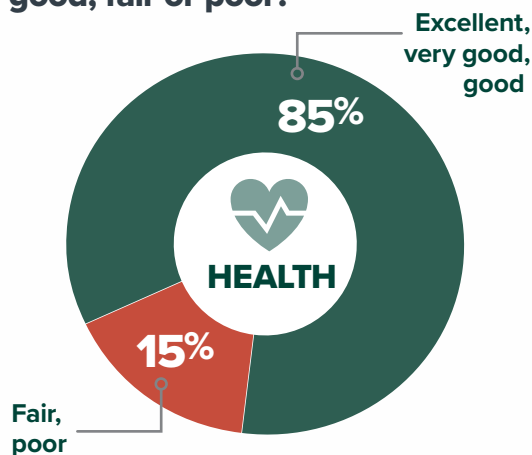


Key findings

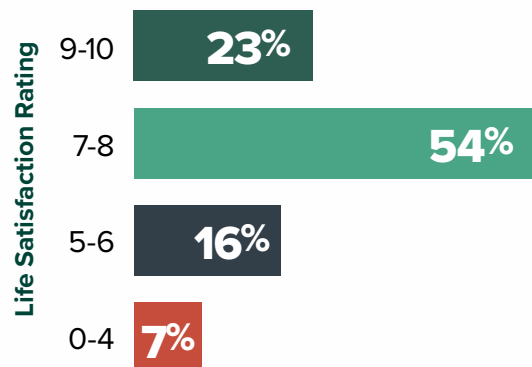
Park visitor vs. non-park visitor health gap

We asked South Australians about their health and wellbeing – regardless of their parks usage.

‘In general, would you say that your health is excellent, very good, good, fair or poor?’



‘How satisfied do you feel with your life?’



Those with excellent (48%) health had a higher incidence of recording a life satisfaction rating of 9-10.

Likelihood of those visiting metropolitan parks for a given health score



The differential in self-reported health scores between park and reserve visitors and non-visitors from the DEW SA Parks Visitation Survey 2018-19 (McGregor Tan) were assessed to determine the likelihood of visiting metropolitan parks. The results showed that the health for those that visit parks is less likely to be Poor or Fair, about equally likely to be Good, but far more likely to be Very Good and Excellent by comparison.

The study highlights that there is a relationship between park visitors and health, although the causes for this difference are many and complex.



- There is a noticeable difference in health between those individuals that visit parks and those that do not.
- Parks visitors consistently report higher health scores compare to non-visitors.
- Visiting parks is associated with better overall health outcomes among visitors.
- The study highlights a clear relationship between parks visits and improved health, although the causes for this difference are many and complex.

On average,
parks visitors are

4%
healthier
than those who do
not visit parks.

Key findings

Potential avoided public health costs



- The higher self-reported health scores of parks visitors has potential economic implications for public health.
- Improved health of visitors to SA's metropolitan parks and reserves equated to \$140 million in potential avoided public health expenditure on chronic diseases in SA in the benchmark year.

\$140 M
Potential avoided
health costs



- Lower socio-economic groups* have poorer health and bear a larger proportion of disease burden, experiencing the highest total health costs.

*IRSD decile groups 1-2 and 3-4.

- Lower socio-economic groups gain the highest total potential avoided health cost benefits from park visits, constituting **44%** of the total potential avoided health costs in the benchmark year.
- If we created parks in closer proximity to lower socio-economic groups, it would potentially lead to improved health for these groups.



Key findings

Proximity to metro parks and reserves



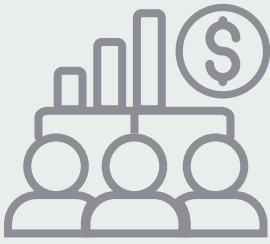
- Parks and reserves play a crucial role in enhancing health and wellbeing for all South Australians.
- Adelaide's metropolitan parks and reserves are highly accessible, with most residents living within a 30-minute drive.
- The study conclusively found that people of low socio-economics visit parks*, but not as frequently.

*Data from Cobbler Creek and Onkaparinga demonstrate this.

- People living close* to a park visit parks more frequently than those further away.

*Within 3-15km away, or less than a 30-minute.

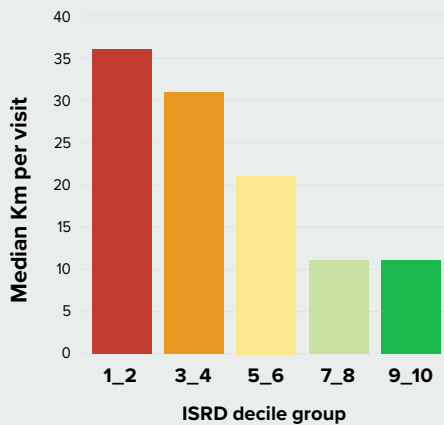




- Socio-economic status significantly impacts access to parks among different demographic groups.
- Limited availability of parks within a local area is a barrier to regular park usage and greater community engagement.
- Individuals from lower-income suburbs often have to travel longer distances to access parks.
- Where low socio-economic groups live in close proximity to park*, their frequency of visits is similar to higher socio-economic groups living close to parks.

*Cobbler Creek and Onkaparinga.

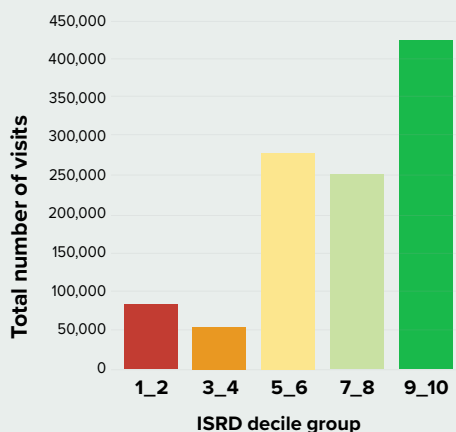
Median distance travelled to SA's metro national parks and reserves by each ISRD decile group



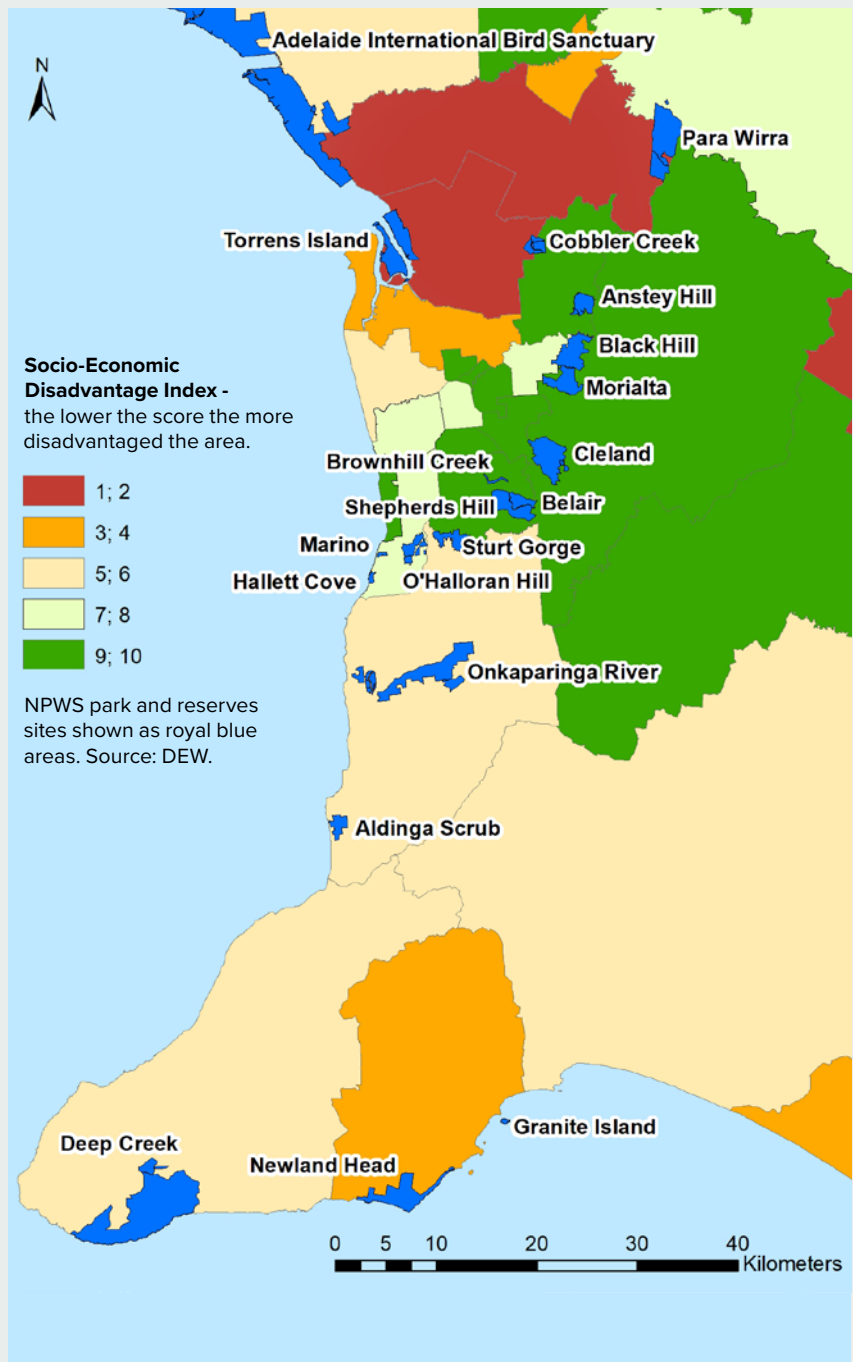
The lower the score the more disadvantaged the socio-economic group.



Total number of visits to SA's metro national parks and reserves by each ISRD decile group



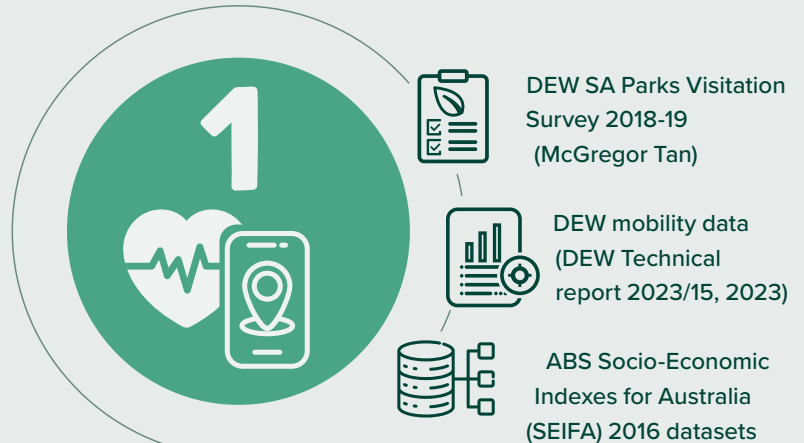
The lower the score the more disadvantaged the socio-economic group.



The Index of Relative Socio-economic Disadvantage (IRSD) distributions by Local Government Area and 20 most popular SA metropolitan national parks and reserves sites

Method for determining potential avoided health costs

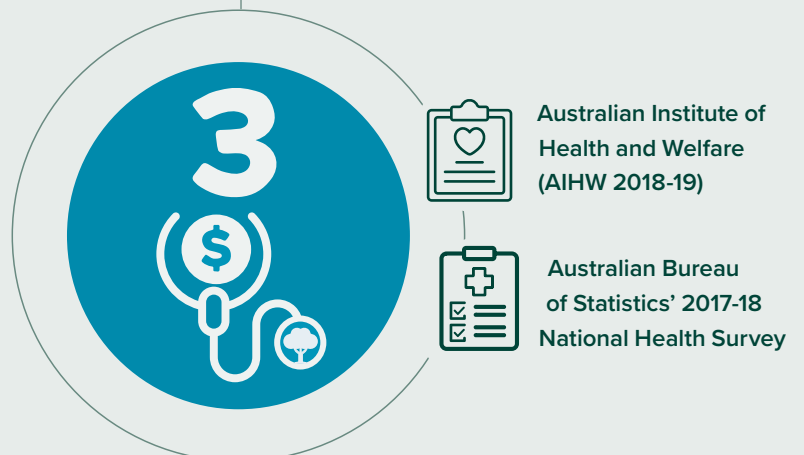
Health and socio-economic assessment of South Australians



Analysis of health difference between parks visitors and non-visitors



Determining potential avoided health costs



The study used the self-reported health scores of South Australians from the DEW SA Parks Visitation Survey 2018-19 (McGregor Tan), which use the standardised SF1 general health status question.

Australian Bureau of Statistics (ABS) Socio-Economic Indexes for Australia (SEIFA) 2016 data provided an Index of Relative Socio-economic Disadvantage (IRSD) by postcode, rating areas from 1 (highly disadvantaged) to 10 (highly advantaged). Park visitor postcodes were determined using mobility data. (DEW Technical report 2023/15, 2023.)

Data sets were categorised into IRSD groups, enabling comparison of health status between those McGregor Tan survey participants who visited parks and those who did not.

As the Macgregor Tan survey is assumed to be representative of the entire SA population, the difference in self-reported health scores (per each IRSD group) revealed within the Macgregor Tan survey were applied across the greater SA population.

The study calculated South Australian health expenditure across 10 long-term chronic disease categories using the Australian Institute of Health and Welfare 2018-19 data. The average health burden and health score differences between park visitors and non-visitors revealed within the Macgregor Tan survey was then applied to the broader costs to the SA Health budget to estimate potential avoided state public healthcare costs.

Data sources

Annual DEW Parks Visitation Survey 2018-19:

The study examined park visitation, socio-economic factors, and health outcomes using diverse datasets, with a specific emphasis on park visitation data from 2018-19 (McGregor Tan).

Pre-COVID-19 benchmark data

The 2018-19 timeframe serves as the benchmark year for broader investigations into the value of SA's parks and reserves, providing insights into pre- COVID-19 pandemic park visitor trends and benefits.

Mobility data

Mobility data, gathered from GPS-enabled mobile devices, was used to estimate park visitation, and determine the origins of park visitors, particularly for parks with limited visitation statistics for the financial year 2018-19.

Socio-economic data

Socio-economic data was obtained from the Australian Bureau of Statistics' Socio-Economic Indexes for Australia (SEIFA) 2016 datasets, which ranks areas according to their relative socio-economic advantage and disadvantage using the ABS 2016 Census data.

Australian Health Datasets

The study made use of publicly available datasets, including the ABS 2017/18 National Health Survey and data from the Australian Institute of Health and Welfare (AIHW 2018-19) concerning health costs.

Activities and experiences visitors enjoy in South Australia's national parks and reserves



Activities and experiences

Evidence shows that spending time in nature is good for us – it improves our physical and mental health. It also provides opportunities for social connections and community cohesion, providing a sense of belonging for all communities.

DEW surveyed South Australians about their park visits in the past year. Responses highlight that activities supporting health and well-being are the most favored among park visitors.

What activities and experiences did you enjoy when visiting parks in the last 12 months?





Our parks network is made up of

362 individual parks and reserves.



Covering

21.6%
of the state's
landmass.



Parks in South Australia cover

21.2 M
hectares

Our parks cover



31%
of the state's
coastline



Implications for park management and public health

The study underscores the importance of creating opportunities for equitable access to parks for improved health outcomes across the community.

The findings in this study provides encouraging insights on the health advantages of visiting South Australia's national parks and reserves.

While park visitation is associated with improved health, other factors may also play a role. The study shows parks contribute to better health outcomes, but correlation does not imply causation. Understanding the correlation between park visits and health outcomes is essential for informed policy decisions.

This report supports the Healthy Parks Healthy People SA strategy, fostering enhanced collaboration between the environment and health sectors to implement innovative approaches to park management, health and wellbeing, and environmental outcomes for the benefit of all South Australians.



Acknowledgements and technical information

The study was conducted in partnership with the University of Adelaide and commissioned by the Department for Environment and Water. It was led by Adam Loch, John Maclean, and Patrick O'Connor from UoA.

The study was independently reviewed by Dr David Adamson (UoA) and Thilak Mallawaarachchi (Hon. A/Prof. University of Queensland).

This study builds upon a Department for Environment and Water study of mobility data.

Technical reports

For further information on the recreation and wellbeing values of parks, refer to the University of Adelaide report:

Loch, A., MacLean, J., & O'Connor, P. (2023). *Recreational and Wellbeing Benefits of Metropolitan Parks; Willingness to Pay and Avoided Health Costs associated with Adelaide Metropolitan Parks*, University of Adelaide.

Insights on mobility data in South Australian parks were drawn from the DEW technical report:

Sexton, S.C., Scholz, G.D., & Presbury, P. (unpublished). *Application of mobility data to estimate NPWS visitation and demographics: a trial for the Adelaide metropolitan area*. DEW Technical report 2023/15. Government of South Australia, Department for Environment and Water, Adelaide.

For access to this report, please contact glen.scholz@sa.gov.au.

Further information on the economic value of nature-based tourism in SA's parks and reserves, see:

[Economic value of SA's Parks – Summary report](#)

See the supporting technical information:

[Economic value of SA's Parks – Technical report 1 \(Primary economic value\)](#)

[Economic value of SA's Parks – Technical report 2 \(Secondary economic value\)](#)

[Economic value of SA's Parks – Technical report 3 \(Kangaroo Island Wilderness Trail Case Study\)](#)





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