# Is it all downhill from here?

## Reflections on Australia's Snow Industry

## The Realities, Challenges and Opportunities Ahead

*Pete Brulisauer*


EWA 185

*The views and opinions in this presentation are my own and do not reflect the views, positions, or policies of Alterra Mountain Company or any of its affiliates or shareholders.*

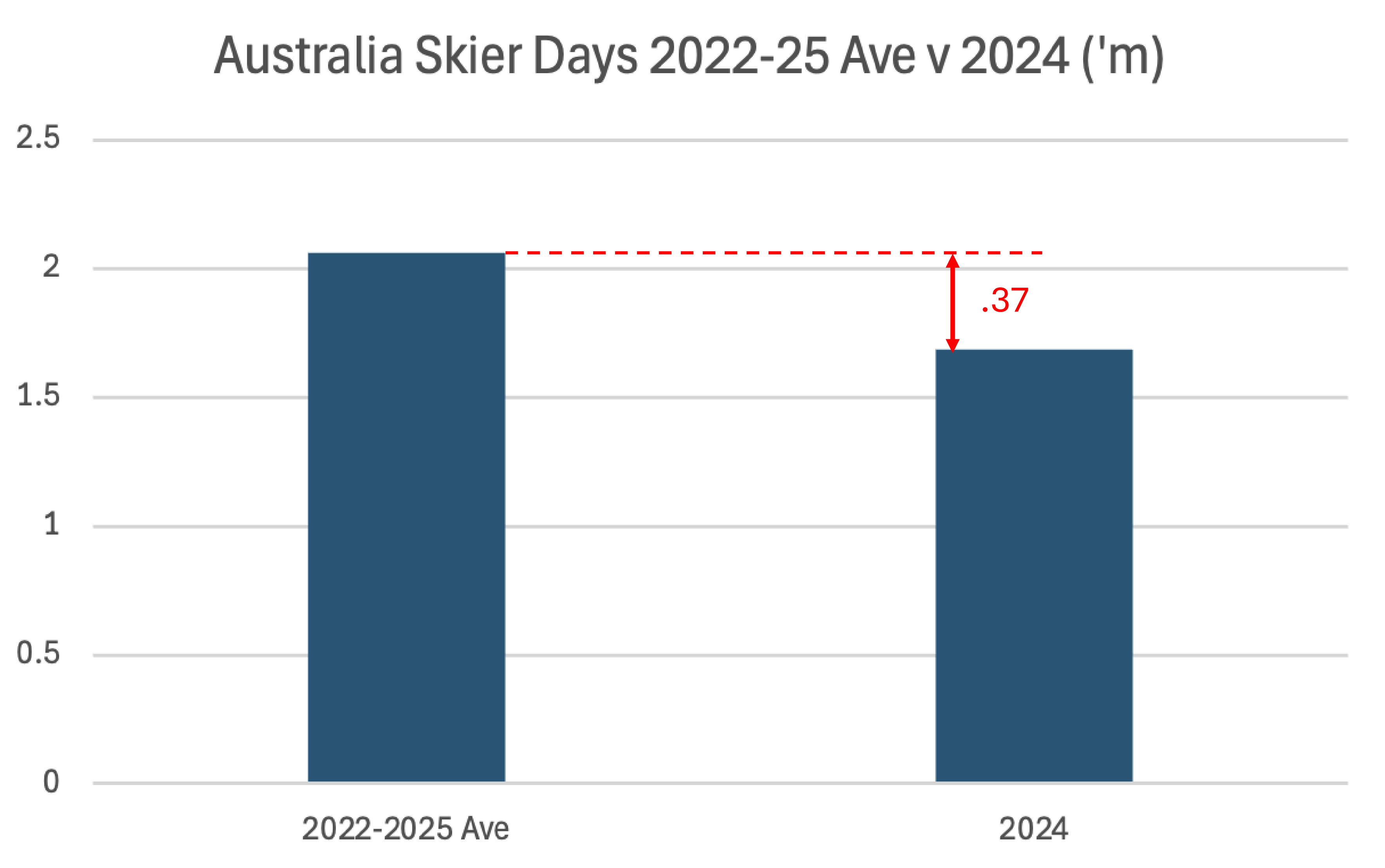
There’s only one reality and set of associated challenges and opportunities that I think are worth discussing.

But first…

The Economic Contribution
of Australia’s Snow Resorts

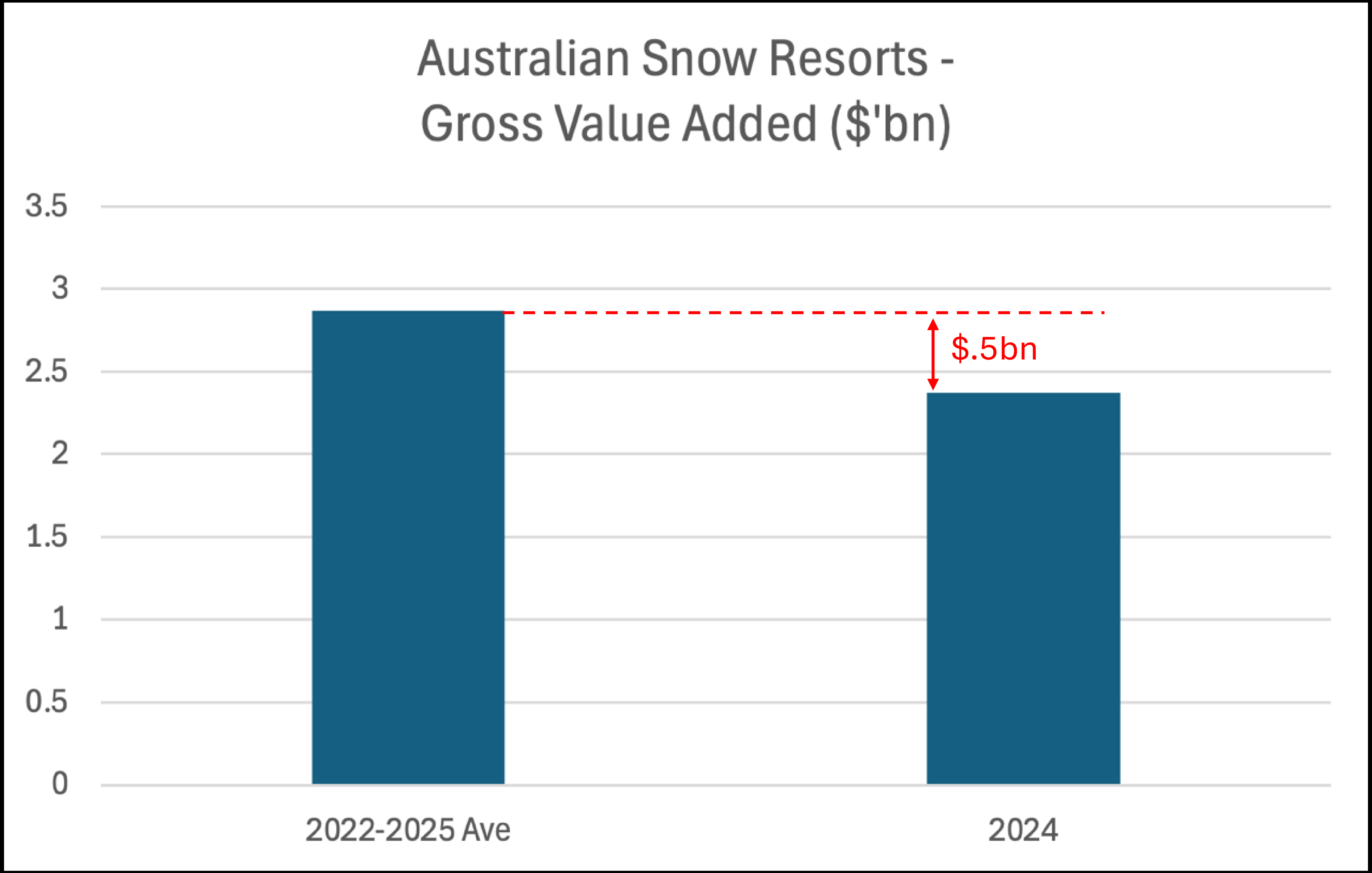
And so what?

# The bad 2024 snow season saw 370,000 less skier visits than 2022-25 ave.

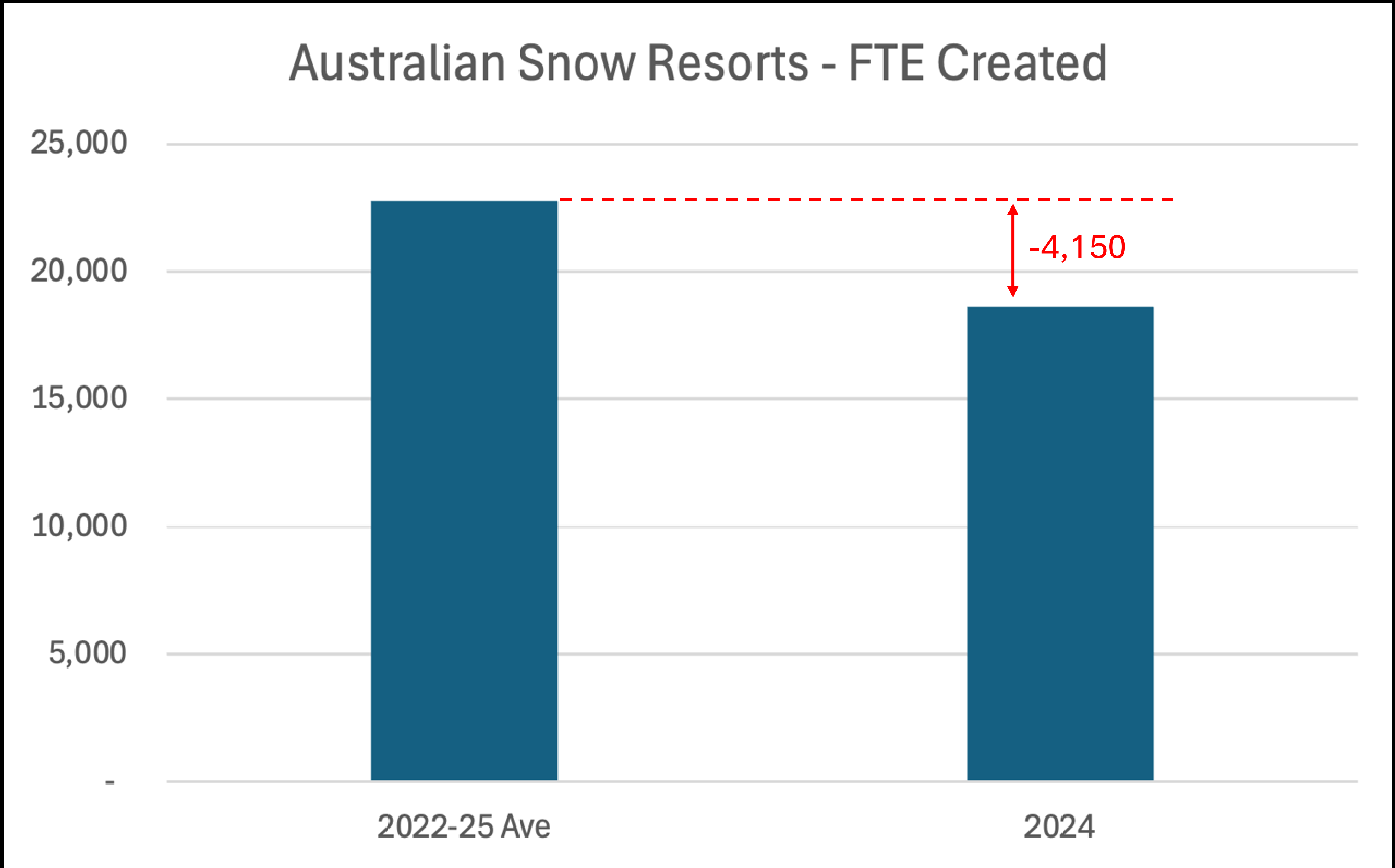



Snow Resorts Australia – asaa.org.au

# And cost the economy ~$500m in Gross Value Added



# And around 4,150 FTE jobs



About 20 years ago…

**Mr Andrew Constance:** No more skiing at Perisher.

**Mr STEVE WHAN:** I have heard the comments from the member opposite, which again dodge the issue. The amendment indicates that the Opposition does not support signing the Kyoto protocol. That is an absolute disgrace. The people of my electorate are concerned about that because our economy is based on the alpine regions of New South Wales. The alpine resorts in the Monaro electorate are the key economic drivers of the region. The recently released draft plan of management for resorts suggested that alpine resorts and the economic activity boosted by the resorts provide about 8,000 jobs and contribute $335 million to the State's economy.

That is a massive input into the State's economy and into the region I represent, much of which is in jeopardy by the impact of greenhouse gas emissions. The report entitled "Kosciuszko National Park 2004 Draft Plan of Management" highlighted the CSIRO figures for the Snowy Mountains area, which honourable members referred to previously. It is possible that by 2020 the areas with at least 30 days snow cover could receive a reduced snow cover of between 14 per cent and 54 per cent. Potentially those snow cover areas could be reduced by between 30 per cent and 93 per cent by 2050. In other words, it is possible that by 2050 the vast bulk of snow cover in the Snowy Mountains area could be lost. That is potentially devastating to both the economy and the natural environment of the area I represent.

Research conducted by the CSIRO is quite astounding: it reveals that the effect of climate change could result in the possible extinction of between 15 and 40 of the 200 alpine plant species within 70 years, with a further 49 species likely to experience a reduction in distribution. That is with a rise in temperature of as little as a one degree celsius. It is possible that the endangered pygmy possum could be eliminated. The snowline could rise and there could be changes in other areas, including alpine herb fields and snow patch feldmarks. There is likely to be an increase in the diversity, abundance and distribution of weed species, something people in the Monaro are very concerned about. Feral animals could become more prevalent in the upper alpine ranges and wildfire is likely to increase.

# Australian ski resorts address global warming

Arthur DeJong keynote speaker at down under conference

Andrew Mitchell
May 19, 2006 10:16 AM

In 2003 the United Nations Environment Program released a report suggesting that hundreds of ski resorts around the world will go out of business as a result of global warming.

The snowline is expected to rise by about 300 metres in the next 50 to 70 years in the best case scenario, driving skiers into the high alpine, while the season itself gets shorter and shorter with fewer days of reliable snow.

It's a threat that Australia's small but vibrant ski industry is taking seriously.

In 2004 the government worked with the State of Victoria and ski operators to develop the Alpine Resorts 2020 strategy. In early May the resorts followed up with the launch of a climate change awareness campaign based on the North American National Ski Areas Association's Keep Winter Cool campaign. Arthur DeJong, manager of mountain planning and environmental resources for Whistler-Blackcomb, was invited to Melbourne as the keynote speaker for the launch at the Alpine Resorts Sustainability Forum.

## The Hennessy et al. (2008) Paper

**Climate change effects on snow conditions in mainland Australia and adaptation at ski resorts through snowmaking**

Hennessy and colleagues from CSIRO and the ANU examined past climate trends (1957–2002) at four alpine sites in southeastern Australia, projected future snow conditions for 2020 and 2050, and assessed what level of snowmaking would be required to adapt to those projected changes. The projections used two scenarios anchored to CSIRO's 2001 climate projections, all relative to a 1990 baseline.

The study was commissioned by, and developed in collaboration with, a consortium of stakeholders, including the Australian Ski Areas Association and the NSW, Victorian and Australian Governments.

To assess snowmaking adaptation requirements, CSIRO worked directly with snowmaking managers at each of the eight mainland ski resorts. The collaboration involved:

- Each resort's snowmaking manager nominating a resort-specific target snow-depth profile, reflecting the depths needed to maintain a viable ski operation
- The CSIRO snow model then calculating the volume of man-made snow — and the corresponding number of additional snow-guns — needed to meet those targets in 90 % of years
- This calculation being run under both the low-impact and high-impact climate scenarios for 2020, allowing a direct comparison of adaptation requirements

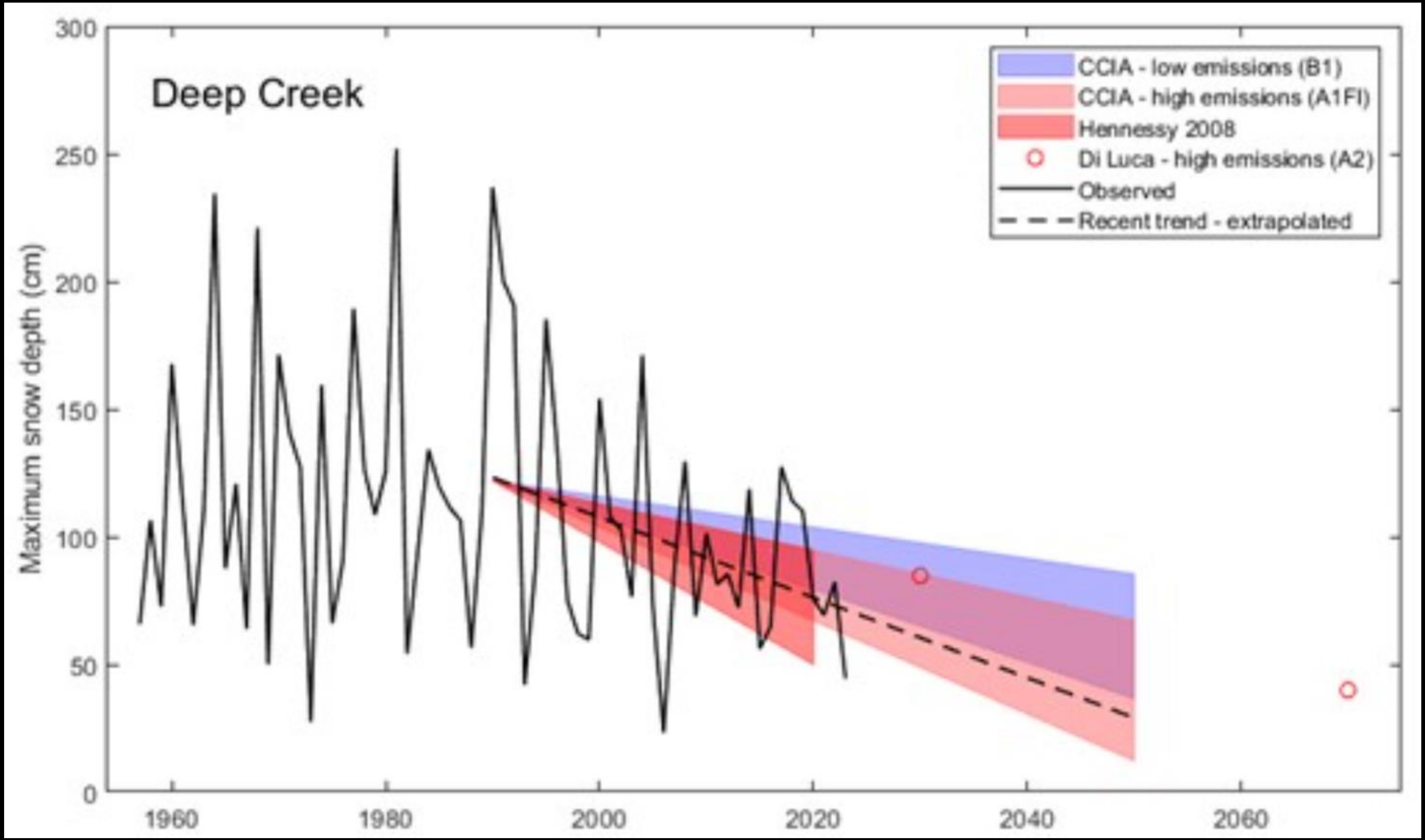
Fast forward 17 years...

## Climate change effects on snow conditions in mainland Australia and adaptation at ski resorts through snowmaking (Hennessy et al. 2008) — Scenarios vs. Realised

### The two scenarios with realised conditions through 2025

| Metric | Low impact | High impact | Actual (realised by 2025) |
|---|---|---|---|
| 2020 ΔT | +0.2 °C | +1.0 °C | **At or above the high-impact bound.** Hennessy (2003) measured ~+0.2 °C/decade for 1962–2001; Chubb et al. (2022) found this rate has approximately doubled since 1990, implying alpine warming of roughly +1.0 to +1.4 °C by 2020 vs 1990 |
| 2020 ΔP | +0.9 % | −8.3 % | **At or beyond the high-impact bound.** Southeast Australia April–October rainfall down ~9 % since 1994 (BOM 2024) |
| 2050 ΔT | +0.6 °C | +2.9 °C | — |
| 2050 ΔP | +2.3 % | −24.0 % | — |

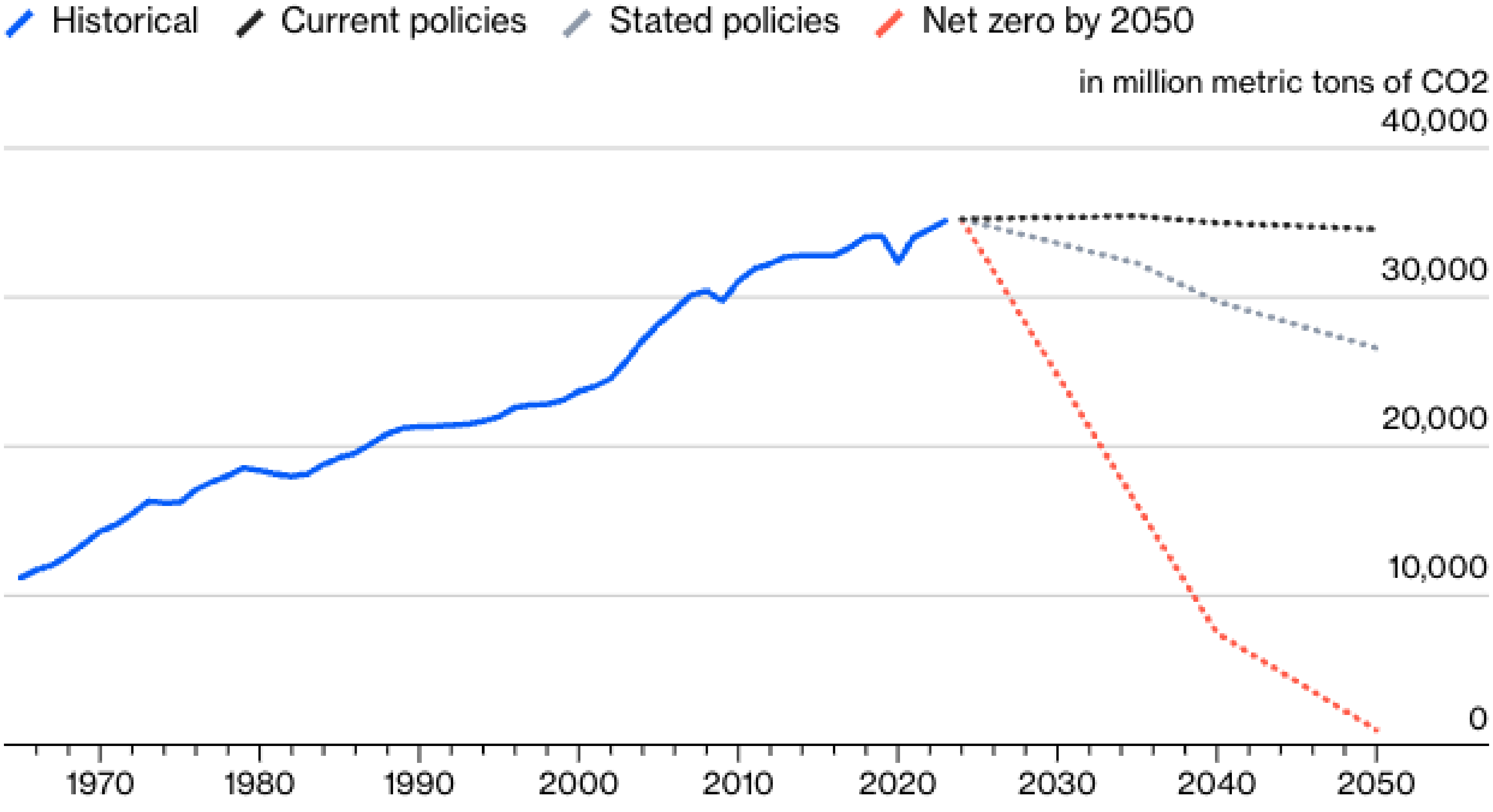
# In 2024 CSIRO concluded that natural snow depth decline is also following the high impact scenario




https://www.csiro.au/en/news/all/articles/2024/june/snow-trends-australia

## Net Zero Has Zero Chance

The world's emissions have continued growing and little suggests that they would follow the cliff-like curve needed to reach net zero by 2050




Sources: UK Energy Institute and International Energy Agency

New Scientist

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Environment

# Earth is now heating up twice as fast as in previous decades

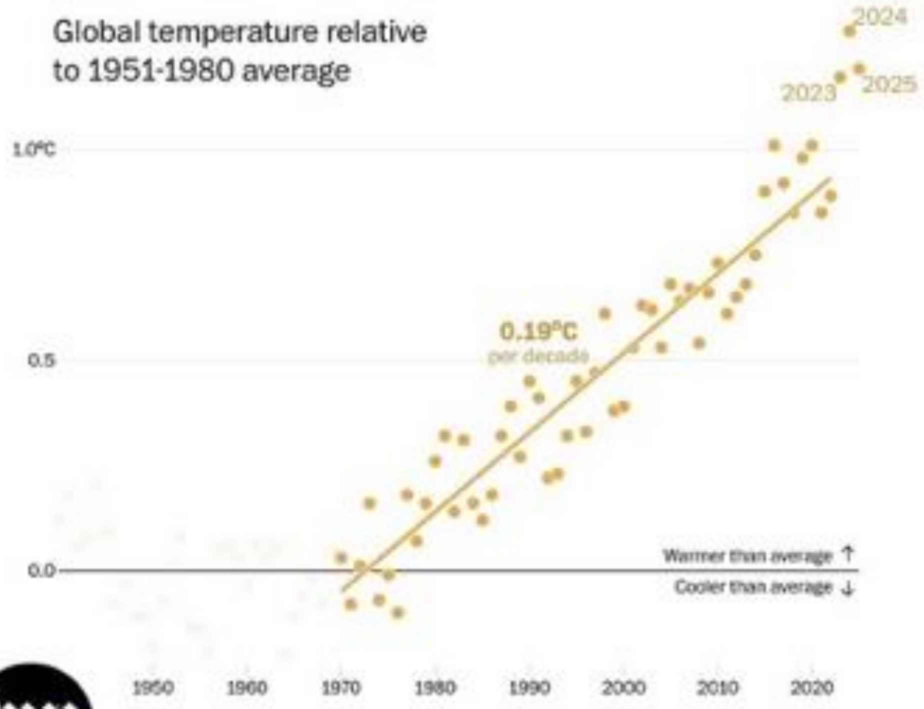
Since 2014, the planet has been warming by about 0.36°C per decade, according to an analysis of five temperature datasets, raising fears that climate tipping points could be crossed earlier than expected

By Alec Luhn

6 March 2026

# Scientists thought they understood global warming. Then the past three years happened.

Global temperature relative to 1951-1980 average



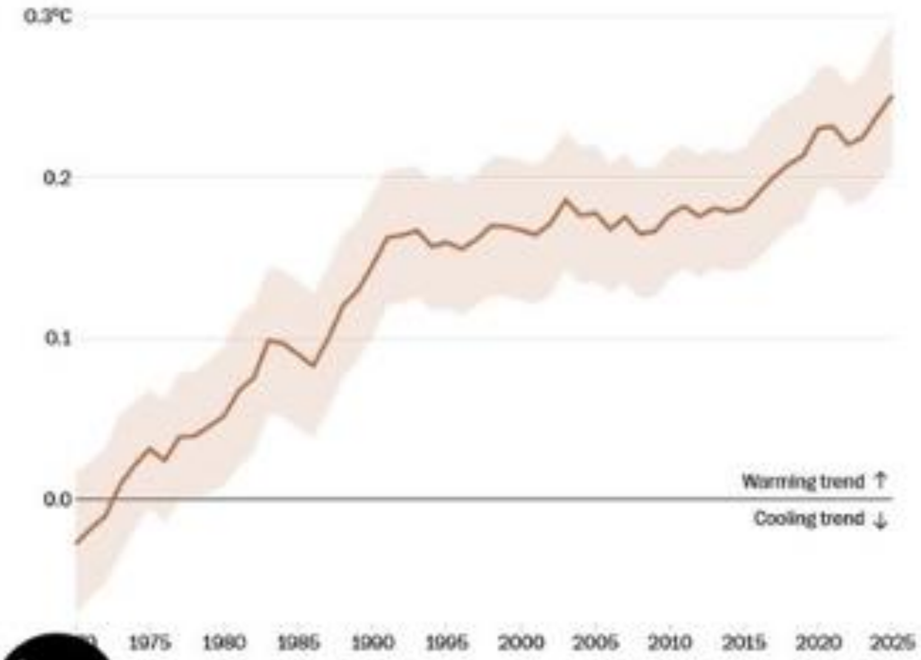



Since the 1970s, the Earth has been warming at a fairly steady rate.

But in the last few years, something changed. 2023, 2024 and 2025 were far warmer than the previous trend.

**The speed of global warming since 1970**

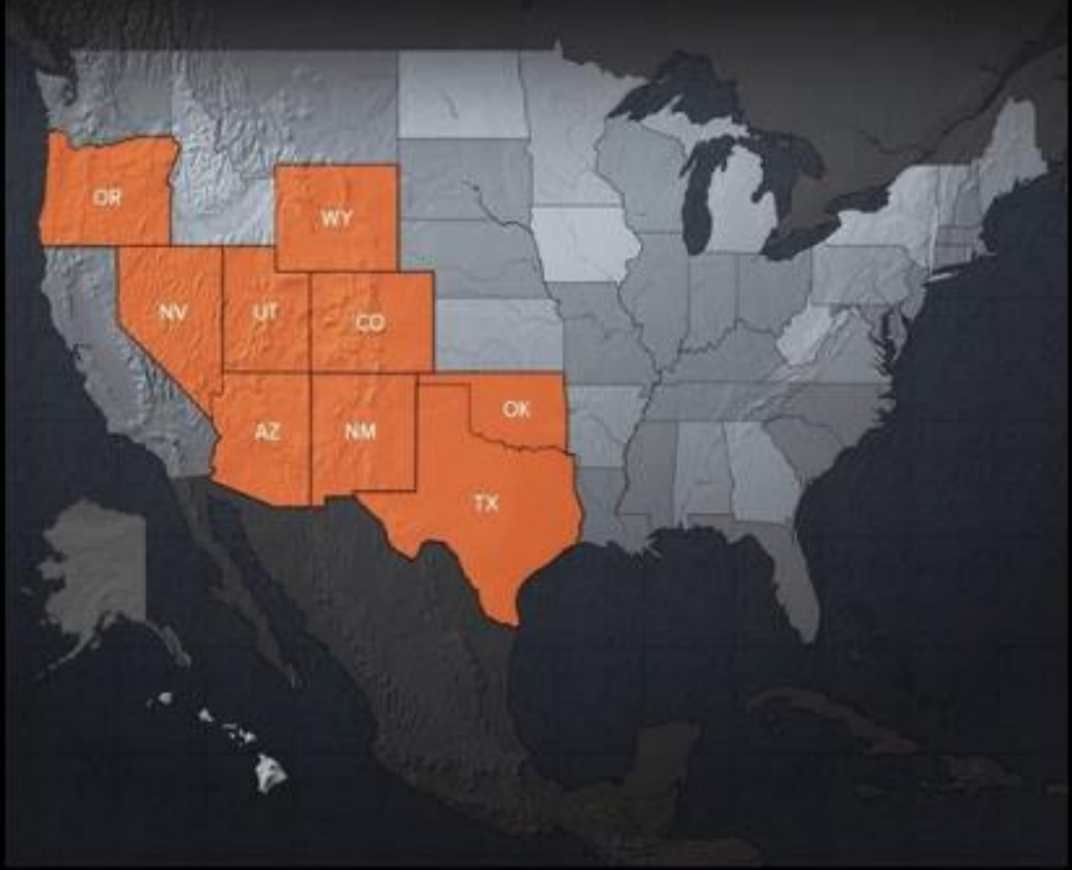
30-year warming trend by end year, in degrees Celsius per decade




...ear's value represents the warming trend over the 30 years leading up to it. Shading represents the 95 ... confidence interval.

abcworldnewstonight

# WARMEST WINTER ON RECORD




WORLD NEWS TONIGHT DAVID MUIR

# Homewood Mountain Resort, CA, Ends Season Early as Historic Heatwave Melts Sierra Snowpack

SNOWBRAINS.COM

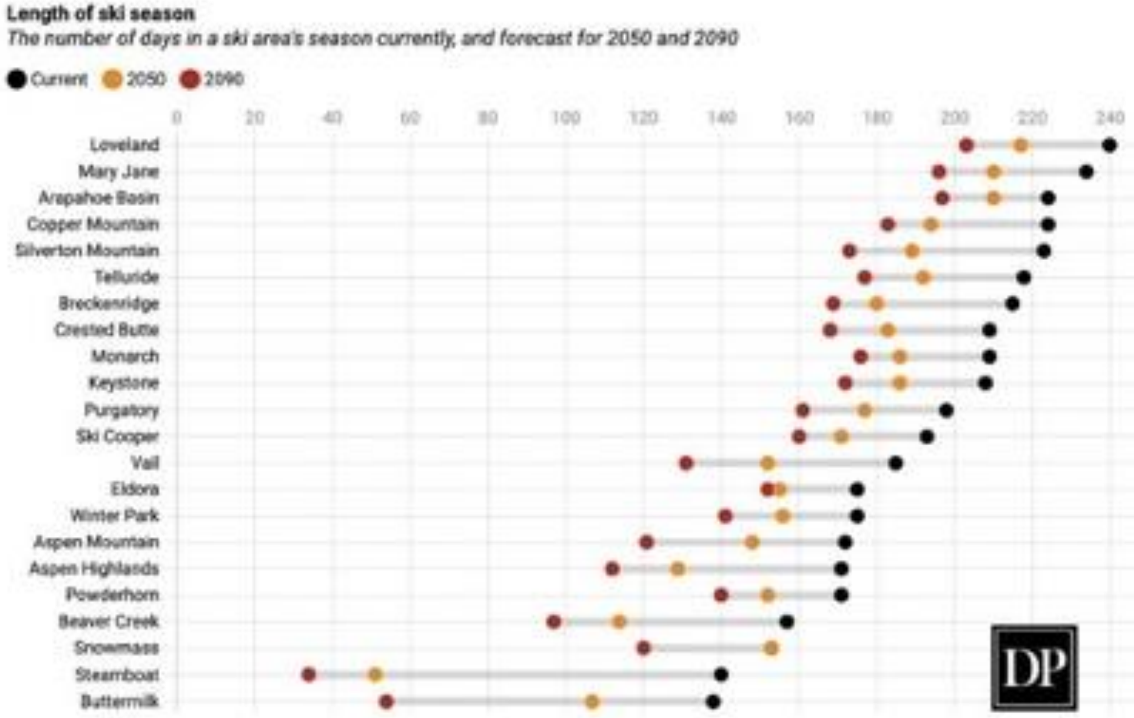

powdermagazine 16h
POWDER
NEWS
Snowbasin To End Season Prematurely: “This Is Not What We Wanted”
The Utah ski resort has experienced one of its “most challenging” seasons in history.
MAR 19, 2026 11:47 AM EDT
BY MATT LORELLI Senior Editor, Powder
POWDER.COM


POWDER
powdermagazine 16h
POWDER
NEWS
Two Lake Tahoe Ski Resorts To Close Amid Unprecedented March Heat Wave
Sierra-at-Tahoe and Homewood gave it all they got, but Mother Nature is having the final say.
MAR 18, 2026 1:33 PM EDT
BY IAN GREENWOOD Staff Writer, Powder
POWDER.COM

# A LOT FEWER POWDER DAYS

Colorado's ski areas could lose weeks of skiing this century as climate change continues, according to a 2017 study published in Global Environmental Change.

This chart shows potential change in a moderate-emissions future under a model that projects warmer temperatures and a slight increase in precipitation.



Meanwhile, on the ‘four-season’ front…

# In NSW, Governments have invested over $50m in walking and MTB trails in and around the snow resorts

| Amount | Trail / Project | Funding Source |
|---|---|---|
| At least $13.8M | Thredbo Valley Track (full ~37.5km) | NSW State — NPWS Kosciuszko National Park budget + Restart NSW Regional Growth Environment & Tourism Fund |
| $17.17M | Snowies Alpine Walk (stages 1–3) | NSW State — Restart NSW Regional Growth Environment & Tourism Fund |
| $10M | Snowies Alpine Walk (stage 4) | Australian Federal — Regional Recovery Partnerships Program |
| $11.8M | Lake Jindabyne Shared Trail | NSW State — Restart NSW Regional Growth Environment & Tourism Fund |
| *Not separately disclosed* | Jindabyne Mountain Bike & Adventure Park | NSW State — within $242M Snowy Mountains Special Activation Precinct |
| **$52.77M** | **TOTAL (disclosed line items, minimum)** | |

# And similarly in Victoria

| Amount | Trail / Project | Funding Source |
|---|---|---|
| At least $2.35M | Mt Buller MTB Trail Network (full ~70km) | Victorian State + Federal T-QUAL grants (multiple rounds 2013–2024) |
| $2.6M | Falls Creek Mountain Bike Park (~50km) | Victorian State — Regional Development Victoria + Regional Infrastructure Grant |
| $10M | Omeo Mountain Bike Trails (114km) | Victorian State + Federal + East Gippsland Shire Council |
| $17M | Falls to Hotham Alpine Crossing (52–57km walk) | Victorian State — DJSIR |
| *Not separately disclosed* | Mt Hotham Alpine Gateway & trail access | Victorian State — Regional Development Victoria |
| **~$32M** | **TOTAL (disclosed line items, minimum)** | |

# Can big ski resorts really transform into year-round destinations?

Thredbo has installed an alpine rollercoaster and Mount Buller put in new equipment to transport mountain bikes as operators try to maximise their investments.

**Ayesha de Kretser**

*Senior reporter*

Feb 13, 2026 - 12.00pm

From Europe to North America, ski resorts are facing a similar problem. Their customers are getting older and staying for less time.

Stuart Diver knows this well, having just returned from a trip to some of the world's

"Winter growth across ski resorts all around the world is becoming harder and harder to generate," he says. "It's an ageing demographic in skiing and it's getting harder to attract younger people. People are becoming more time-poor, so they're taking shorter holidays, rather than taking their seven days or two weeks. They're coming for a couple of four-day stays."

Thredbo has billed itself as a year-round resort since its inception in the 1960s, with Australia's tallest peak, Mount Kosciuszko, on its doorstep.

# Thredbo

Revenue up 19.5%, EBITDA +30.8%.

Strong winter yield compared to pre-COVID +~80%.

Summer performance in line with PY until bushfires impacted visitation in January.

Recognised as Australia's Best Ski Resort at World Ski Awards for 9th year in a row.

FY result depends on snow conditions in June 2026.

## Half year ended 31 December

| | 2024 | 2025 | VAR |
|---|---|---|---|
| Revenue[1] ($000) | 61,874 | 73,956 | +19.5% |
| **EBITDA[2] ($000)** | **19,907** | **26,030** | **+30.8%** |
| PBIT[3] ($000) | 14,631 | 20,742 | +41.8% |

1. Normalised Revenue is revenue before individually significant items. Normalised Revenue is an unaudited non-IFRS measure.
2. Normalised EBITDA is profit before depreciation, amortisation, the impact of AASB 16 *Leases*, interest, tax and individually significant items. Normalised EBITDA is an unaudited non-IFRS measure.
3. Normalised PBIT is profit before the impact of AASB 16 *Leases*, interest, tax and individually significant items. Normalised PBIT is an unaudited non-IFRS measure.

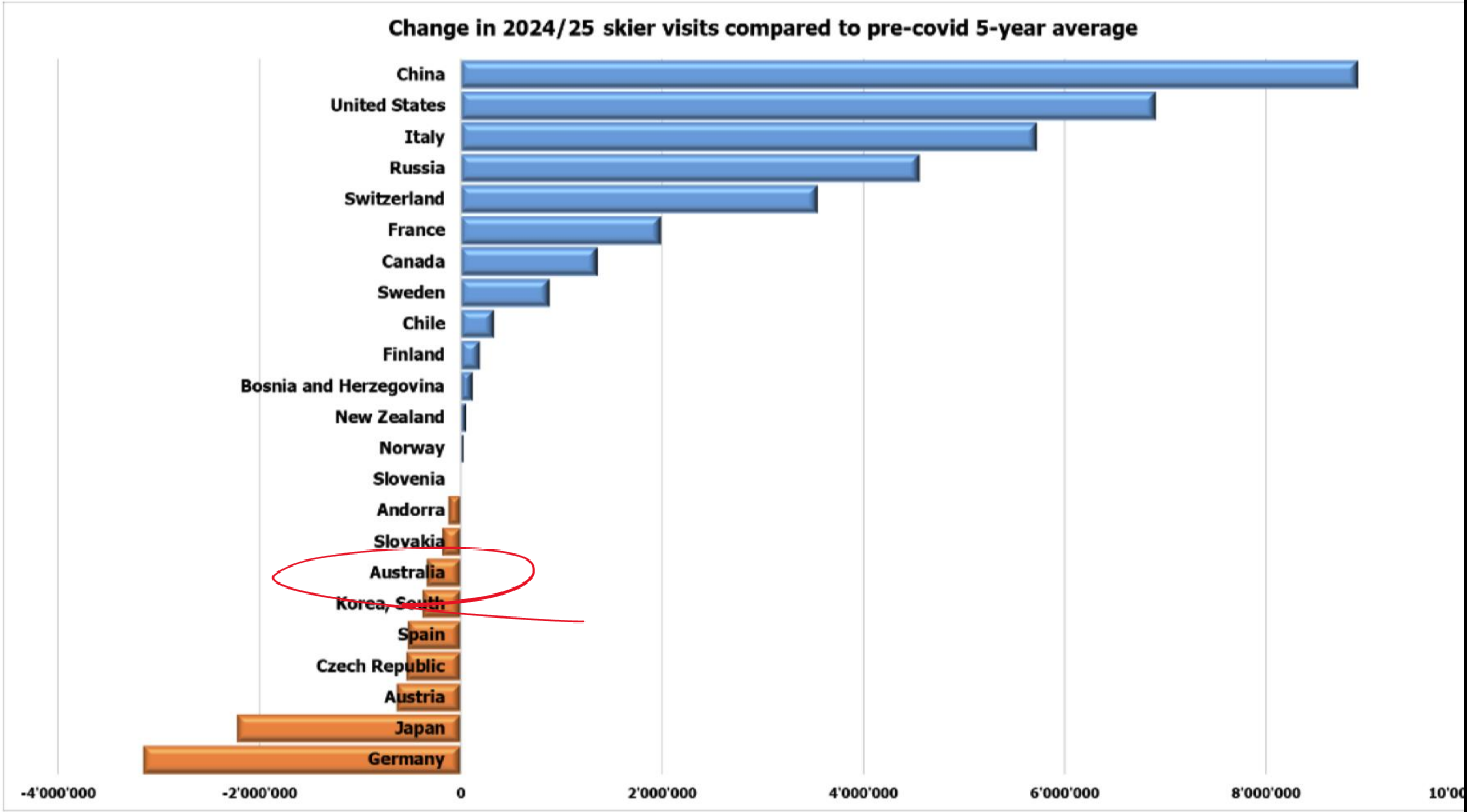
Q: Is investing in walking / MTB trails the most effective way for Government to minimise the impacts of climate change on regional mountain economies and jobs?

Q: Are these trail investments benefitting the local tourism economy as forecast? What’s the impact? What are the learnings?

Q: Is Thredbo the only Australian ski resort likely to ever have commercially viable summer operations?

# The Australian Snow Industry in the Global Context


- 399m skier visits - globally
- Best visitation on record
- Most countries are above pre-covid 5 year average
- The number of resorts remains constant, with growth in China offsetting some climate decline in Europe
- Despite unfavorable natural snow conditions – many countries reported best ever skier visits (decoupling of snowfall and visits)



Change in 2024/25 skier visits compared to pre-covid 5-year average
China
United States
Italy
Russia
Switzerland
France
Canada
Sweden
Chile
Finland
Bosnia and Herzegovina
New Zealand
Norway
Slovenia
Andorra
Slovakia
Australia
Korea, South
Spain
Czech Republic
Austria
Japan
Germany
-4'000'000
-2'000'000
0
2'000'000
4'000'000
6'000'000
8'000'000

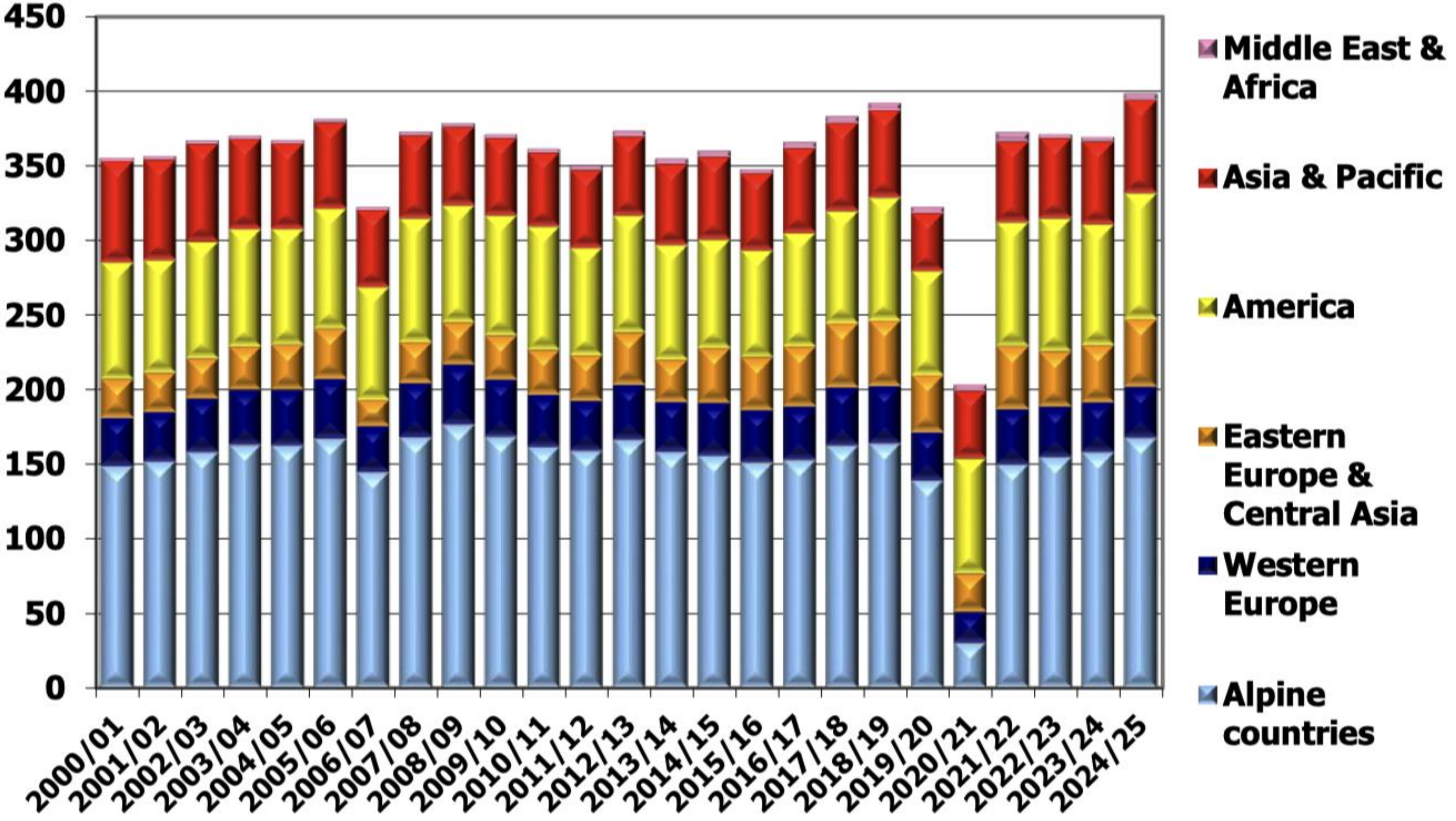
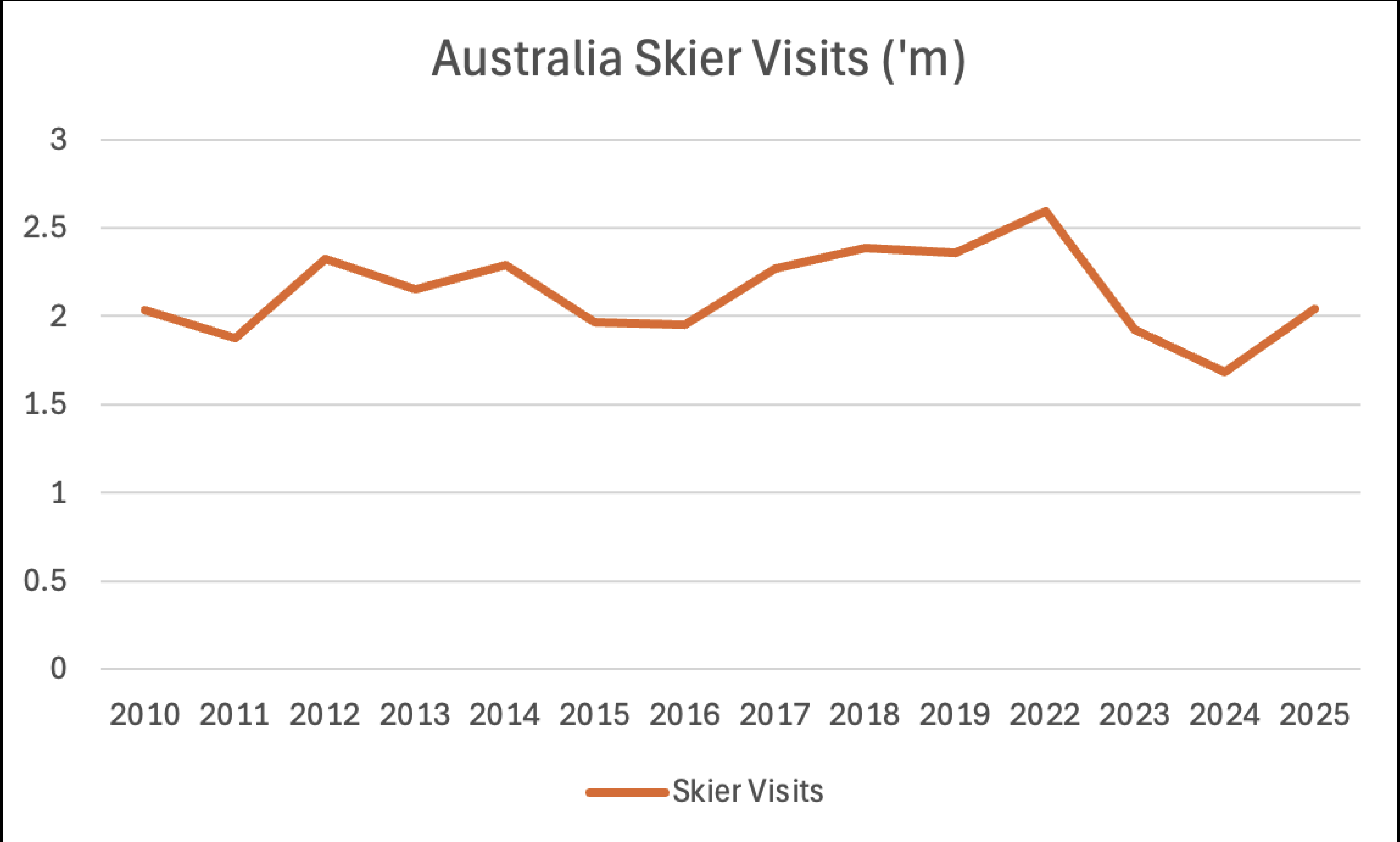
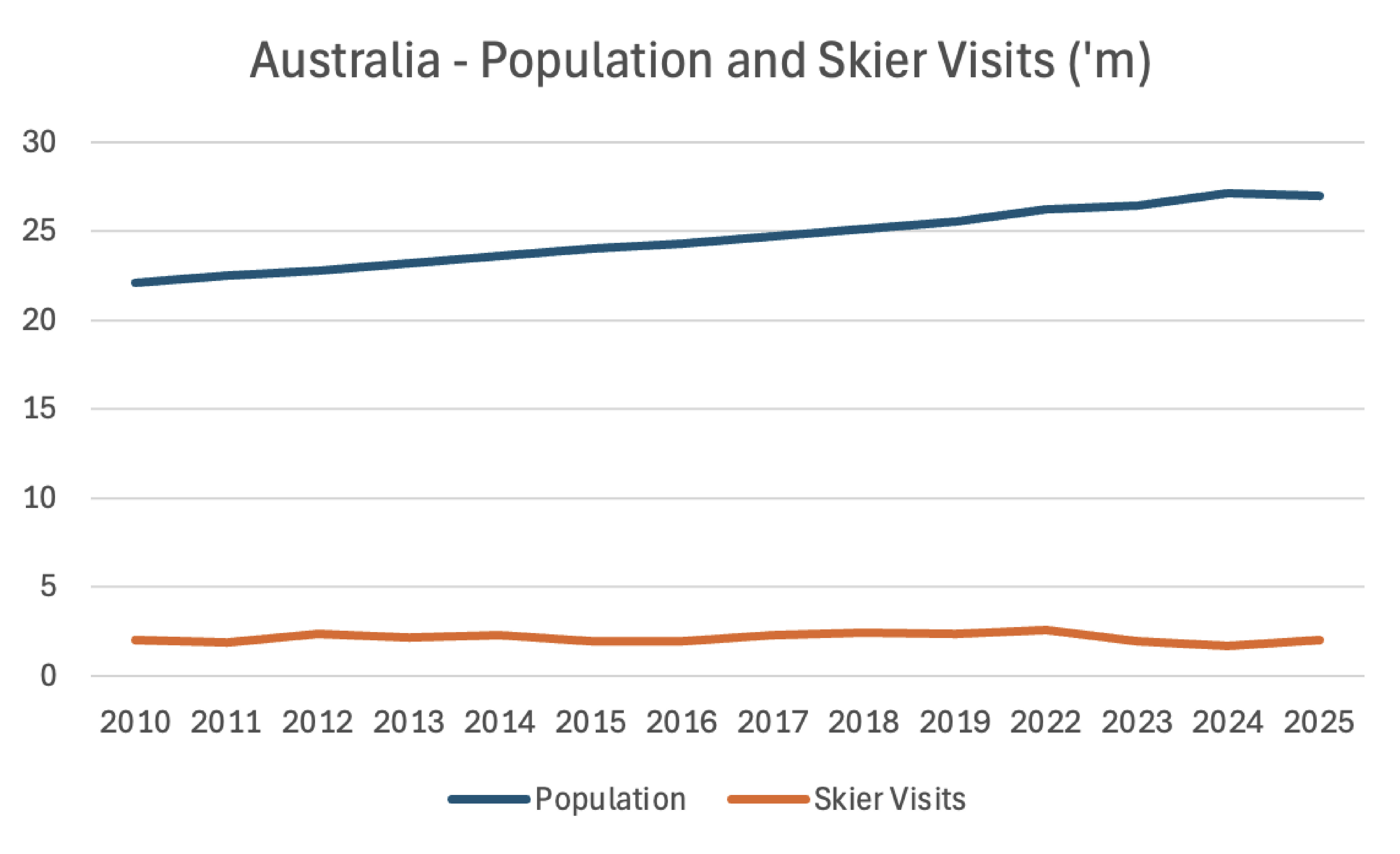



**Figure 7: Evolution of skier visits per region (millions)**




Excludes 2020 & 2021 - COVID affected years
Snow Resorts Australia – asaa.org.au




Excludes 2020 & 2021- COVID affected years
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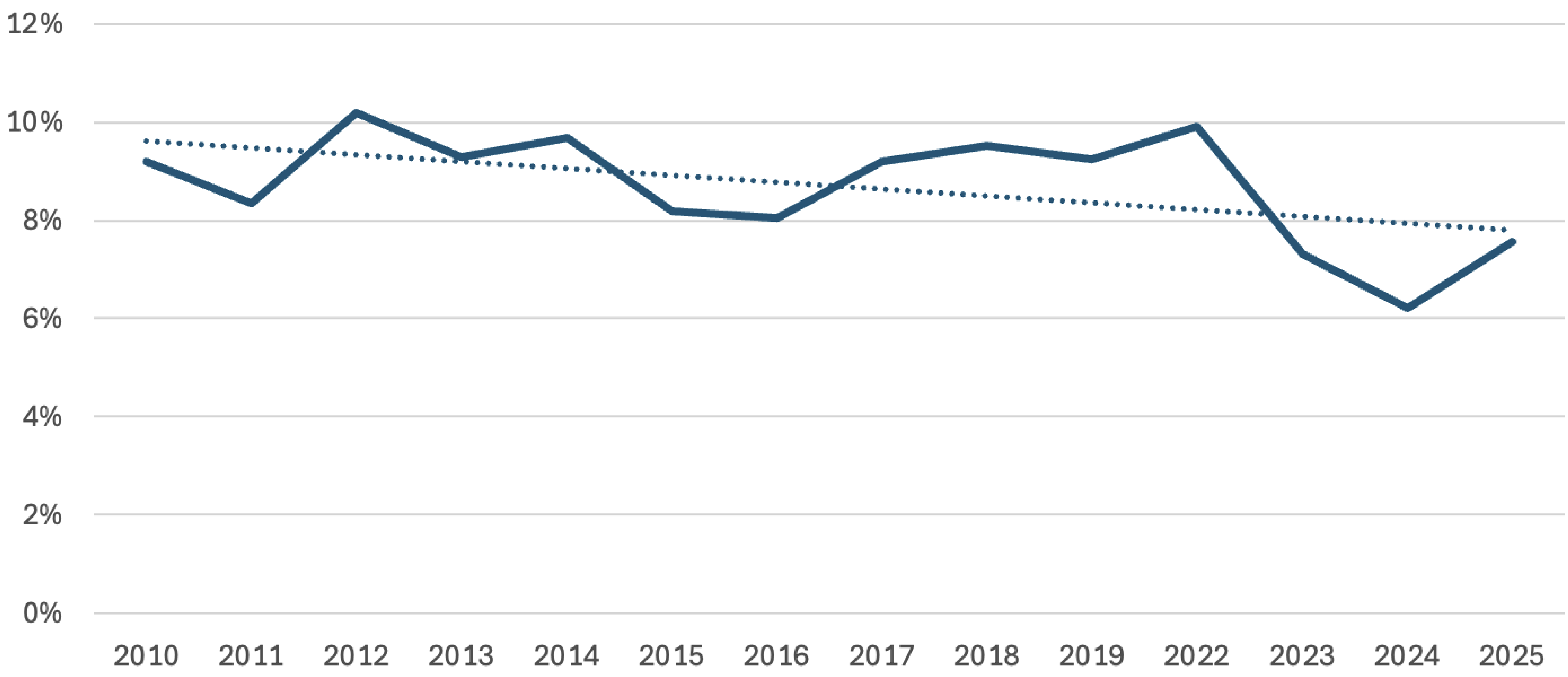
# Skier Visits as a Percentage of the Australian Population




Excludes 2020 & 2021 - COVID affected years
Snow Resorts Australia – asaa.org.au

# Austria’s ski resorts are also experiencing warming. 2025/26 was one of the warmest winters on record

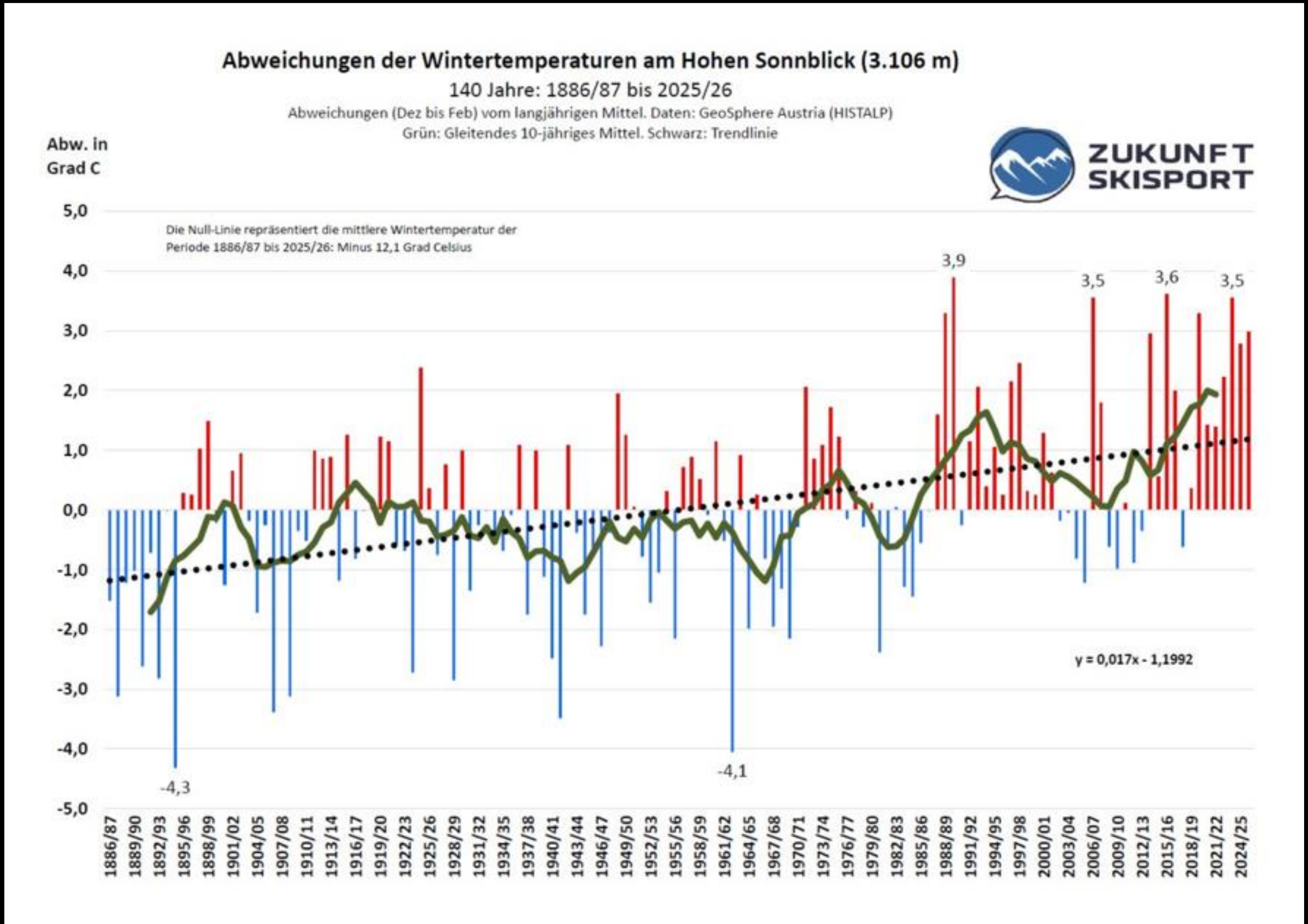



*Fig. 1: Deviations of winter temperatures on the Hoher Sonnblick from the 140-year average from 1886/87 to 2025/26. Data: GeoSphere Austria (HISTALP) (01). Graphic: ZUKUNFT SKISPORT*

https://schoepfblog.at/gunther-aigner-winterruckblick-2025-26/

# But visits and business is resilient...

**Heavy ski tourism**

*This winter in South Tyrol* was surprisingly good for ski tourism : little snow, but plenty of sunshine, pleasant temperatures, and perfect slopes thanks to artificial snowmaking. The 2025/26 season will likely go down as one of the most successful ski seasons in Austrian tourism history.

Especially in the restaurant sector, sales increased sharply; plenty of sunshine meant packed terraces. And despite the less than rosy overall economic situation, skiers were eager to spend, resulting in record sales for both ski resorts and mountain restaurants.

The final tally won't be available until the end, but based on a survey of ski resorts, we can cautiously estimate that the 2025/26 ski season will be roughly on par with the 2024/25 season. Austrian ski tourism has thus been in a stable phase for more than 25 years, and at such a high level that further quantitative growth is hardly possible (Fig. 4).

https://schoepfblog.at/gunther-aigner-winterruckblick-2025-26/

# Thanks to world leading snowmaking technology and coverage

**Revolution in Technical Snowmaking**

Finally, a crucial point to properly understand the current developments in ski tourism: We must grasp the *revolution* brought about by artificial snowmaking. In recent years, ski tourism has largely become independent of meteorological conditions. Without modern, widespread snowmaking, the 2025/26 ski season would hardly have taken place in many areas. Snowmaking has become essential, indispensable, and impossible to imagine skiing without it.

The goal of the ski tourism industry must be to make it as resource-efficient and environmentally friendly as possible in the future. At the same time, outdated prejudices and fears from the environmentalist camp must be dispelled through clear and reliable communication of data and facts.

https://schoepfblog.at/gunther-aigner-winterruckblick-2025-26/

The Sydney Morning Herald

Traveller



Inspiration Europe

# In 25 years of skiing, this Olympic region delivered my best ever trip

Craig Tansley
February 21, 2026 – 5:00am

But what's noteworthy is that these mountains don't even have to offer fresh snow as a reason to visit. In 25 years of global ski travel, I doubt I've had a better ski trip. Perhaps, in these climate-changed times, the Dolomites offer us all hope for the future of the ski holiday.

Skiing in Italy's Dolomites is as much about eating – and drinking – as it is about the sport itself. This is one of the world's premier ski

Though it's barely snowed in six weeks, the snow is oddly spectacular, considering it's predominantly man-made. European skiers

# How much snowmaking coverage (trails) do European ski resorts have ?

| Country | Snowmaking coverage |
| --- | --- |
| Italy | 90% |
| Austria | 75% |
| Switzerland | 53% |
| France | 37% |

* Approximate national averages based on industry reporting.

# And how much snowmaking coverage does Australia have (skiable area)?

| | Skiable Area (Ha) | Snowmaking Area (Ha) | % Snowmaking |
|---|---|---|---|
| Perisher | 1245 | 53.4 | 4% |
| Thredbo | 480 | 70 | 15% |
| Selwyn | 45 | 36 | 80% |
| Charlotte Pass | 50 | 10 | 20% |
| Mt Buller | 300 | 70 | 23% |
| Mt Hotham | 320 | 25 | 8% |
| Falls Creek | 450 | 100 | 22% |
| Corin Forest | 1 | 1 | 100% |
| Mt Baw Baw | 30 | 10 | 33% |
| Ben Lomond | 29 | 2 | 7% |
| **Total** | **2950** | **377.4** | **13%** |

Snow Resorts Australia – asaa.org.au

Despite investing in snowmaking automation, water cooling, gun and pipe replacement and all-weather snowmaking, the area covered by snowmaking at most major Australian resorts has not significantly increased in the last 10-15 years.

Q: How do the current levels of snowmaking at Australian resorts compare to the levels required to adapt to the low and high impact climate change scenarios in the 2008 CSIRO report?

Q: How much snowmaking expansion and improvement is required for the Australian resorts to adapt to forecast rates of climate change by 2050?

Q: Is it time to update the science to find out?

Q: If snowmaking isn’t sufficient to adapt to the impacts of climate change on the snow season, what are the risks for resorts? industry? government? community? sport?

Q: Given the generally strong ROI from snowmaking investments, but lack of major expansion in recent years, do the Australian resorts need government help to make investments in snowmaking to minimise the effects of climate change to protect regional economies, jobs and communities and the sport? Would that be appropriate?

Opus consumes usage limits faster than other models

Please provide me with examples of countries where government either directly funds or co-funds snowmaking infrastructure in ski resorts on the basis of if it being a primary adaptation strategy to climate change to support local jobs, regional tourism economies and communities.

2:36 96

Opus 4.7

Several countries explicitly use public money to fund or co-fund snowmaking, justified as protecting mountain jobs and tourism economies in the face of climate change. The clearest examples:

**Italy** is the most explicit case. In 2024, Italy's Ministry of Tourism allocated €230 million to support cable car facility renovation, modernization, and "artificial snowmaking systems," with Tourism Minister Daniela Santanchè framing it as protecting a vital sector and the Italian mountains. Snow Industr…

**France** runs a long-standing public-private model. A study of 56 ski lift companies in the French Alps found that a significant share of investment is backed directly or indirectly by public money from local and regional authorities seeking to protect tourism jobs and tax revenues. Vetromebel

**Switzerland** funds ski areas through cantonal development banks and federal regional-policy instruments. Swiss ski lift and snowmaking capabilities have expanded partly using financial aid from public funds ScienceDirect , and most Swiss ski areas are supported by the public either through subsidized funds or ownership, with the central justification being the reduction of regional disparities. Springer

**China is a category of its own** — the world's largest example of state-driven snowmaking expansion, but the framing is industrial policy and regional economic development rather than climate adaptation. The numbers are staggering.

Snowmaking is publicly funded or co-funded in many countries around the world. It’s recognised as being core public infrastructure enabling climate resilience and regional development.

It significantly benefits every sector of the snow tourism economy and sport.

Q: As a group is there anything more important to unite around than saving the Australian snow season from the forecast impacts of climate change?

Q: Then, using the economic report as a foundation, why not unite and put the case to government that it needs to support a climate resilience fund to update the science and significantly upgrade and expand snowmaking at Australian snow resorts to protect regional economies, jobs and the sport?

Thank you