

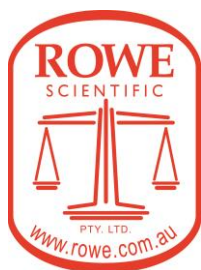


**Highly Commended**

# **Science Writing Year 5-6**

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## The Effects of a Nuclear Bomb Striking Adelaide

It is 2025, and a 15-kilo ton nuclear bomb strikes the beautiful city of Adelaide, the sky fills with a light brighter than the sun, blinding anyone who looks up (Tsipis, K.; 1985). A fraction of a second later the heart of Adelaide vanishes in an intense fireball: Rundle mall, Parliament House and Torrens footbridge are all vaporised in mere seconds (Gladstone, S & Dolan, P.; 1977). A huge flame pillar emerges from the centre stretching two kilometres across (Xu, S. & Dodt, A.; 2023), swallowing everything in a molten orange sphere, melting steel, stone and flesh – trees combusted, shadows burned into the concrete, people gone before they can even scream.

Five seconds later the shock wave hits through the moderate blast zone (Wellerstein, A.; 2025). Wind moving faster than sound, rolling outward obliterating everything in its path. The air blast flattens buildings up to 4.5 kilometres from the impact point, through North Adelaide, Kent Town and Mile End. Homes collapse like sandcastles. Debris becomes shrapnel, intensifying the violence. Those who survive the initial flash are hurtled away, like paper in a strong wind, or they are buried under rubble (Karam, A.; 2021). No sirens sound. The power grid fails. All communications are out.

Time passes and eerie silence descends throughout the fallout zone (Karam, A.; 2021). The silence of catastrophic death. Slowly, from the cratered centre of the city, a column of ash, smoke and radioactive dust rises. Climbing higher than Mount Lofty, interrupting the silence. The eastern breeze starts to bend the huge column with fine particles raining over Norwood, Magill and Athelstone. The fallout is fine, and bright white. It is so light it looks like snow but is deadly to breathe (Wolfson, R. & Dalnoki-Veress, F.; 2021) and the effects will last for weeks. Within 24 hours, radiation sickness hits survivors. Nausea. Bleeding gums. Fevers that burn the body from within.

In the usually quiet suburb of Valley View, 9 kilometres from the impact site, the houses are wrecks; windows shattered, roofs swept right off, debris littering the ground. Survivors are identifiable by their blistered skin, erupting in painful weeping mere hours after the impact. The hospitals, Lyell McKewin and Modbury in the north, Noarlunga in the south, are overwhelmed. There are no back-up systems, no functioning transport routes, no supplies and no protections. Medical staff, where available, treat radiation burns with bottled water and house scissors – peeling away skin like wet paper (Hopewell, J.; 1990).

By three days after impact, triage is based on survival likelihood, rather than medical need. The lack of supplies is the primary concern. By day five, the eastern hills, once a green haven of vineyards and gum trees, low bush scrub and small creeks, are

now ghost lands. The soil, irradiated. Creeks, contaminated. Kangaroos lay in shallow, empty riverbeds, fur singed, eyes glazed and faces contorted with pain.

The Government operating from the relative safety of Canberra, issued warnings and evacuation orders but few could comply. Roads out of the city north and east were choked with wreckage from people fleeing in panic. Many stopped mid-chaos as they watched the explosion, by then their desperate flight too late. Rail and tram lines buckled in the heat, roads bubbled and concrete melted. The outer suburbs became short-term havens as families sought to get clear of the city.

The long-term collapse of Adelaide is perhaps harder to accept. A beautiful city, once a major producer of wine, grain, seafood and solar power, has become a scar on the map. The radiation zone (Wellerstein, A.; 2025), spread over the coming months by wind and rain, leeches into the groundwater – poisoning crops, soil and mutating flora as it goes. Slowly making its way into the sea, once rich under-water landscapes become barren. The shadow spreading towards Antarctica and impacting the migration patterns of fish and mammals alike.

For survivors, the radiation exposure will continue to effect them for the rest of their lives (ICAN; 2025), with increased rates of cancer and chronic disease. Children born in the months and years after, carry the legacy of the attack in their bones, fragile immune systems, skin and stunted growth.

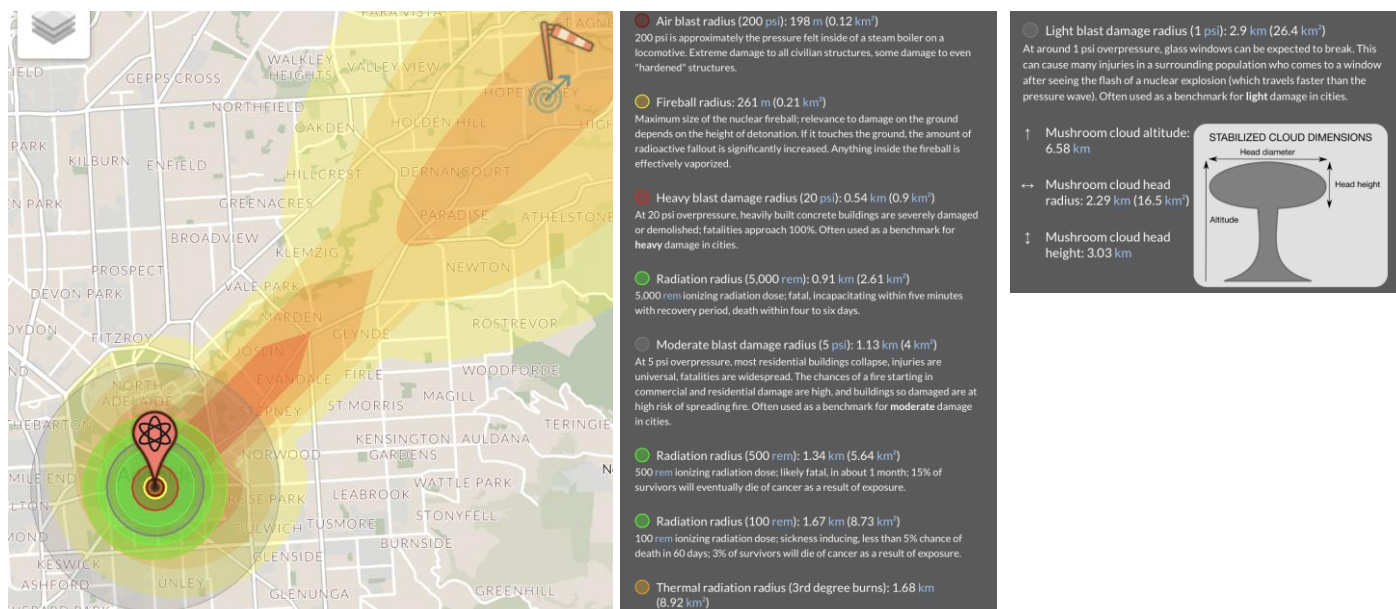


Fig 1 – NUKEMAP modeling of a 15 kilo ton nuclear explosion on Adelaide (Wellerstein, A.; 2025)

Word count: 691 words

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