Earthquake Shaking Green Alert

# M 5.7, 154 km S of Ohonua, Tonga

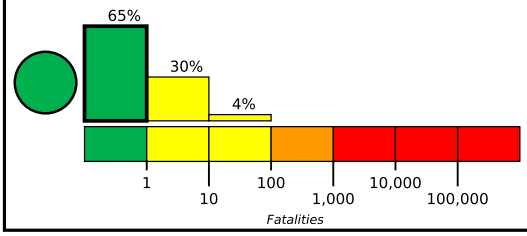
Origin Time: 2023-07-21 19:01:43 UTC (Fri 07:01:43 local)
Location: 22.7271° S 175.1241° W Depth: 14.5 km

**PAGER Version 4**

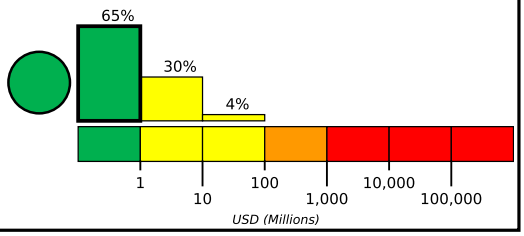
Created: 1 day, 0 hours after earthquake

## Estimated Fatalities

Green alert for shaking-related fatalities and economic losses. There is a low likelihood of casualties and damage.




## Estimated Economic Losses



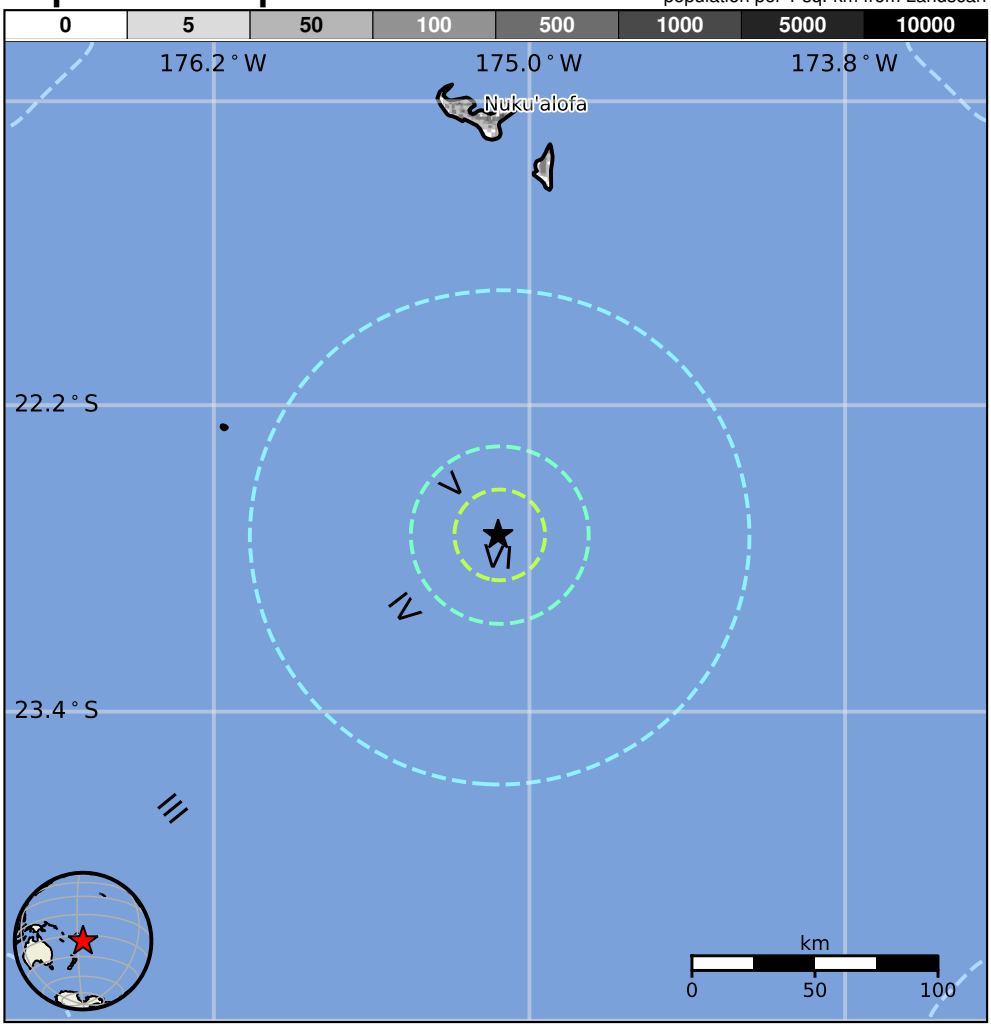

## Estimated Population Exposed to Earthquake Shaking

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ESTIMATED POPULATION EXPOSURE (k=x1000) | | –* | 86k | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESTIMATED MODIFIED MERCALLI INTENSITY | | I | II-III | IV | V | VI | VII | VIII | IX | X+ |
| PERCEIVED SHAKING | | Not felt | Weak | Light | Moderate | Strong | Very Strong | Severe | Violent | Extreme |
| POTENTIAL DAMAGE | Resistant Structures | None | None | None | V. Light | Light | Moderate | Mod./Heavy | Heavy | V. Heavy |
| | Vulnerable Structures | None | None | None | Light | Moderate | Mod./Heavy | Heavy | V. Heavy | V. Heavy |

*Estimated exposure only includes population within the map area.

## Population Exposure

population per 1 sq. km from Landscan




## Structures

Overall, the population in this region resides in structures that are highly vulnerable to earthquake shaking, though some resistant structures exist. The predominant vulnerable building types are unknown/miscellaneous types and wood construction.

## Historical Earthquakes

| Date (UTC) | Dist. (km) | Mag. | Max MMI(#) | Shaking Deaths |
|---|---|---|---|---|
| 1977-06-22 | 67 | 8.0 | VII(47k) | 0 |
| 1983-03-21 | 134 | 6.7 | VII(53k) | – |
| 2006-05-03 | 305 | 8.0 | VIII(7k) | 0 |

## Selected City Exposure

from GeoNames.org

| MMI | City | Population |
|---|---|---|
| III | ‘Ohonua | 1k |
| III | Vaini | 3k |
| III | Haveluloto | 3k |
| **III** | **Nuku’alofa** | **22k** |

bold cities appear on map. (k=x1000)

PAGER content is automatically generated, and only considers losses due to structural damage. Limitations of input data, shaking estimates, and loss models may add uncertainty.

**https://earthquake.usgs.gov/earthquakes/eventpage/us7000khgr#pager**

**Event ID: us7000khgr**