

Human responses to the 1906 eruption of Vesuvius, southern Italy



David Chester^{a,b,*}, Angus Duncan^b, Christopher Kilburn^c, Heather Sangster^b, Carmen Solana^{d,e}

^a Department of Geography and Environmental Science, Liverpool Hope University, Hope Park Liverpool L16 9JD, UK

^b Department of Geography and Planning, University of Liverpool, Liverpool L69 3BX, UK

^c Aon Benfield UCL Hazard Research Centre, University College London, Gower Street, London WC1E 6BT, UK

^d School of Earth and Environmental Sciences, University of Portsmouth, Portsmouth PO1 2UP, UK

^e Instituto Volcanológico de Canarias (INVOLCAN), Puerto de la Cruz, Canary Islands, Spain

ARTICLE INFO

Article history:

Received 19 December 2014

Accepted 4 March 2015

Available online 14 March 2015

Keywords:

Vesuvius
1906 eruption
Human impact

ABSTRACT

Cultural and political contexts are important in determining the ways in which communities respond to volcanic eruptions. Understanding the manner in which communities and the State apparatus have coped with historic eruptions can provide insights into how responses have influenced vulnerability and resilience. The 1906 eruption of Vesuvius is well suited for such a study as it was one of the first major eruptions in which there was a significant element of State control, and this worked alongside more traditional pre-industrial responses. This eruption was extensively reported in the regional, national and international press and in archives which include still photography. One feature is the rich archive of material published in English language newspapers of record which are analysed fully in the paper for the first time. Many of these data sources are now accessible on-line. The eruption started on April 4th with mild explosive activity and the eruption of lava from 5th to 7th April. On the night of the 7th/8th, activity intensified when a vigorous lava fountain inclined obliquely to the north east, deposited a thick layer of tephra on the towns of Ottaviano and San Giuseppe. This led to roof collapse and a large number of fatalities. There was increased lava emission and a flow progressed south through the outskirts of Boscotrecase cutting the Circumvesuviana railway line and almost reaching Torre Annunziata. Following April 8th the eruption declined and ended on April 21st. In the initial responses to the eruption pre-industrial features were prominent, with the local communities showing social cohesion, self-reliance and little panic. A more negative aspect was the traditional religious response that involved the use of liturgies of divine appeasement and which included the use of saintly relics and images. There is interesting evidence, however, that this coping strategy was driven by the populace rather than by the clergy. The inhabitants of San Giuseppe, for instance, insisted in taking refuge in a church and this led to over 100 fatalities when the roof collapsed. Intervention by the State included: the effective deployment of troops to handle evacuation, to re-open lines of communication and to distribute food and other relief. Management of the disaster was enhanced when prefectural commissioners were given executive powers. We argue that increased State intervention appears to have reduced self-reliance. In the short-term recovery was supported by regional/state aid and by charitable donations particularly from other governments and members of Neapolitan diaspora in other parts of Italy and abroad. This enabled land clearance, agriculture was re-established and roads/rail links were restored. Long-term recovery was slow with affected local-authorities (i.e., comuni) showing low rates of population growth for more than 15 years.

© 2015 Elsevier B.V. All rights reserved.

1. Introduction

Vesuvius located near the city of Naples in southern Italy (Fig. 1), is one of the world's most celebrated and dangerous volcanoes, erupting frequently during historic times and manifesting all the principal styles of activity. With a basal diameter of 12 km and rising from the Mediterranean shore to a height of 1281 m, its flanks support a population of around 600,000 people, with some 3 million being in range of its eruptive products (Kilburn and McGuire, 2001, pp. 23; Guest et al., 2003,

pp. 25). In addition to its fame and danger, Vesuvius is also one of the most intensively studied volcanoes. Accounts of eruptions date from classical times and correspondence between Pliny the Younger and Tacitus in 79 CE¹ constitute the first reliable reports of an eruption and its impact on the surrounding region, with Pompeii and Herculaneum being just two of many settlements destroyed. The study of Vesuvius has also advanced scientific knowledge more generally and the mountain has been one of the 'cradles' of volcanological enquiry, evidenced by the creation of the world's first dedicated observatory in 1841.

* Corresponding author at: Department of Geography and Environmental Science, Liverpool Hope University, Hope Park Liverpool L16 9JD, UK. Tel.: +44 151 625 8004. E-mail address: jg54@liv.ac.uk (D. Chester).

¹ In recent years and for reasons of inclusiveness the abbreviation CE (i.e., Common Era) has replaced AD (i.e., Anno Domini—of the Christian era). BCE (i.e., before the Common Era) is used in place of BC (i.e., before Christ).

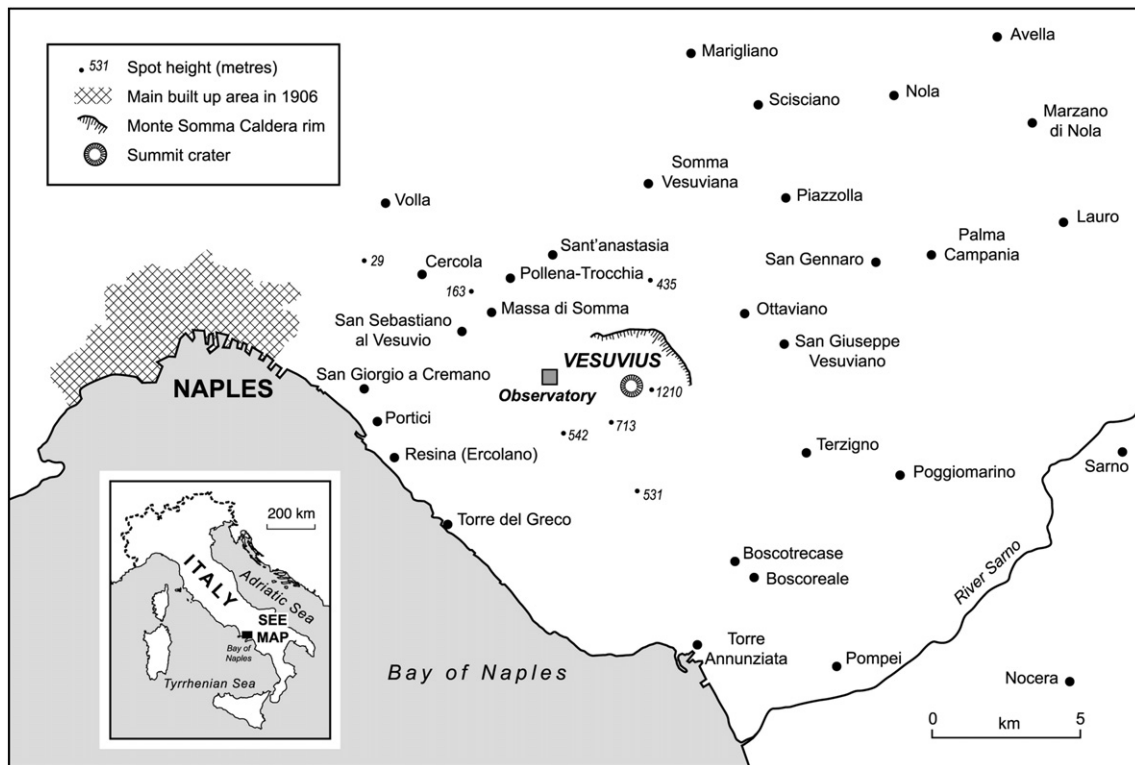


Fig. 1. Vesuvius: Location map (based on Chester, D.K., Duncan, A.M., 2007 Journal of Volcanology and Geothermal Research 166, Fig. 1, pp. 205).

A principal finding of the United Nations *International Decade for Natural Disaster Reduction* (IDNDR) which framed disaster research in the 1990s, was that successful mitigation occurs when two conditions are fulfilled: first, the physical processes controlling an eruption are understood and, secondly, that policies of civil defence are, not just in place, but take into account details of place, culture and society (Peterson, 1996). The IDNDR was succeeded in 1990s by the *International Strategy for Disaster Reduction* (ISDR) (United Nations, 2014) and its agenda, especially following the publication of the *Hyogo Framework for Action*,² became highly ‘incultured’. An understanding of place and culture is now viewed as being vitally important in developing policies of risk reduction. *Vulnerability* is the extent to which a society suffers damage from volcanic activity and is governed both by the nature of the eruption and the characteristics of the society affected, whereas *resilience* is a society’s ability to resist and recover (Gaillard, 2007, pp. 522–3; Manyena et al., 2011), the severity of disaster depending upon the balance between these two characteristics (Chester et al., 2012, pp. 77). Within the context of Hyogo, studies of historical disasters are important for a number of reasons (Bankoff, 2012, pp. 39–40) many of which are relevant to the historical eruptions of Vesuvius.

1. The ways in which people have coped with past eruptions may challenge assumptions that present-day approaches are always the best (i.e., potentially valuable forms of indigenous coping may be uncovered).
2. An appreciation of historical eruptions may show how responses are not isolated incidents, but processes represent a continuum of occurrences and responses to them.

3. Knowledge of how societies have reacted to past eruptions provides valuable information on culture and, more specifically, on aspects of vulnerability and resilience within the region of Vesuvius. The study of past eruptions may identify areas, economic activities, populations and types of building that are particularly at risk.

Although some aspects of culture are long-standing, the prime example being the framing of disasters within the prevailing religious culture of southern Italy (Chester et al., 2008—see Section 5.1), in general more recent historical eruptions have the greater potential to inform policies of hazard risk reduction because aspects of society that were important then may still be relevant today.

Three eruptions have occurred on Vesuvius since 1900 that have affected people and their activities: 1906; 1929 and 1944. The 1929 eruption was small-scale and affected a limited area with lava reaching the village of Terzigno (Fig. 1), and this was followed by lava fountaining and sustained seismic activity. The 1906 and 1944 eruptions were far more serious, with lava flows and pyroclastic deposits causing deaths, injuries and major destruction. Although studied extensively from a volcanological perspective both at the time and subsequently (see references in: Guest et al., 2003; Chester et al., 2007; Scandone et al., 2008; Scandone and Giacomelli, 2013), it is only in recent years that attention has focused on human impact, with major studies being published on the 1944 eruption by Pesce and Rolandi (2000) and Chester et al. (2007), and on 1906 by Avvisati and Casale (2006). Studying the effects of the 1906 eruption is possible because of the availability of: newspapers of record both on-line³ and re-published (De Lucia et al., 2006);

² The *Hyogo Framework for Action 2005–2015* was promulgated following the World Conference on Disaster Reduction that was held in Japan in January 2005. It effectively strengthened the focus on society and culture already present within the ISDR. A revised blueprint will be published in 2015 (United Nations, 2006, 2014).

³ In addition to materials in Italian newspapers, English language newspapers of record carried detailed—often daily—accounts of the 1906 eruption. Many research libraries have direct access to such sources or, alternatively, individual subscriptions may be purchased. Examples include: the *New York Times* (<http://www.proquest.com/products-services/pq-hist-news.html>) and *The Times (London)*—The Times Digital Archive (<http://gale.cengage.co.uk/times.aspx/>).

Download English Version:

<https://daneshyari.com/en/article/4712345>

Download Persian Version:

<https://daneshyari.com/article/4712345>

[Daneshyari.com](https://daneshyari.com)