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A method to add richness to the National Landslide Database of Great Britain

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Landslides in Great Britain (GB) pose a risk to infrastructure, property and livelihoods. Our understanding of where landslide hazard and impact will be greatest is based on our knowledge of past events. Here, we present a method to supplement existing records of landslides in GB by searching electronic archives of local and regional newspapers. In Great Britain, the British Geological Survey (BGS) are responsible for updating and maintaining records of GB landslide events and their impacts in the National Landslide Database (NLD). The NLD contains records of approximately 16,500 landslide events in Great Britain. Data sources for the NLD include field surveys, academic articles, grey literature, news, public reports and, since 2012, social media. Here we aim to supplement the richness of the NLD by (i) identifying additional landslide events and (ii) adding more detail to existing database entries. This is done by systematically searching the LexisNexis digital archive of 568 local and regional newspapers published in the UK. The first step in the methodology was to construct Boolean search criteria that optimised the balance between minimising the number of irrelevant articles (e.g. "a landslide victory") and maximising those referring to landslide events. This keyword search was then applied to the LexisNexis archive of newspapers for all articles published between 1 January and 31 December 2012, resulting in 1,668 articles. These articles were assessed to determine whether they related to a landslide event. Of the 1,668 articles, approximately 30% ($\sim$700) referred to landslide events, with others referring to landslides more generally or themes unrelated to landslides. Examples of information obtained from newspaper articles included: date/time of landslide occurrence, spatial location, size, impact, landslide type and triggering mechanism, although the amount of detail and precision attainable from individual articles was variable. Of the 700 articles found for 2012, 72 of these resulted in additions to the BGS NLD and 4 in amendments to previously collected information. This raises the total number of landslides reported in 2012 from 186 to 258. Using the increased presence of landslides in the news and social media, 2012 had already resulted in the largest number of landslides for a given year being recorded by BGS in the NLD. With the additions from this current study to the NLD, we estimate that the annual total number of landslides was around six times higher in 2012 than the average annual total between 2006 and 2011. Years prior to 2012 plan to be revisited using this method, and more broadly, this method of searching newspaper archives could be applied to many other natural hazards to add richness to databases of historical events and improve our understanding of hazard occurrence and impact.