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Natural hazard and disaster tourism

Abstract
An observed trend, which can be defined as tourist interest in natural hazards and disasters, has persuaded the authors to attempt to research several issues, including tourist motivations and specific tourism properties and functions of this form of activity. The objective also covered the allocation of this social and natural process in the general structure of tourism. This interest has a long history, and a new stage is currently forming, which partly results from factors affecting society, such as information and education, which provoke antagonistic reactions. Extreme natural phenomena entail a common reduction of tourist interest in the destination which hosted the event; however, it never drops to zero. Differences are visible depending on the type of phenomenon. On the other hand, natural hazards and disasters are considered to hold a specific tourism value. This article discusses the allocation of this human activity in the tourism forms known to scientists, accounting for its diversity and relating to ethics.

Keywords
Tourism • natural hazards • natural catastrophes • natural disasters

Dorota Rucińska[1], **Maciej Lechowicz**[2]

[1]Department of World Regional Geography
Institute of Regional and Global Studies
Faculty of Geography and Regional Studies
University of Warsaw
e-mail: dmrucins@uw.edu.pl

[2]Department of World Regional Geography
Institute of Regional and Global Studies
Faculty of Geography and Regional Studies
University of Warsaw
e-mail: m.a.lechowicz@uw.edu.pl

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Introduction

In examining natural hazards, we are dealing with classic dualism. Hazards attract human interest due to concern for health and property; they are an element of the natural environment often avoided by visitors, and their occurrence causes destruction, loss, and deaths. Despite all this, dangerous phenomena attract interest for economic (e.g. fertility of the volcanic soil formed on tuffs), scientific, and sometimes emotional reasons. The search for tension, experiences, and emotions is a natural state for the human psyche. Interest in and observation of the environment around us – both that motivating our development and that constituting the foundation of research – is sociological. The proverbial gawking and curiosity are typical. People can often be seen watching the rising waters of rivers, or taking pictures with volcanic eruptions in the background, as in the case of the Kilauea in 1924 (Tilling et al. 2010).

The tourism interest in natural hazards and disasters observed today in the global society, as well as the lack of a complex view of the problem in the scientific literature, persuaded the authors of this article to research several issues, including tourist motivations and specific tourism properties and functions of this form of activity. The objective also covered the allocation of this social and natural process in the general structure of tourism, accounting for its diversity and relating to ethics.

Information, education, emotions

Information about hazards and their effects draws human attention, which, regardless of the world's region, is used by the mass media. However, these phenomena also play informative and educational roles more and more frequently. Popular science movies dedicated to extreme natural phenomena and the associated extreme engineering are held in high esteem. For humans, information on this subject is often a factor motivating the initiation of ventures, while the peculiarities sometimes transform into an essential interest in the issue. Mass media and marketing are active in the development of various forms of tourism. Information on catastrophes popularises the host location and the type of the phenomenon, which is educational (particularly the information and warnings), and simultaneously stimulates the interest of the audience. Sometimes, journalistic extravagances during extreme conditions become warnings, at other times inspirations for new experiences and destinations for future trips. There were spectacular video materials broadcast in 2011 during the tsunami in Japan. There are numerous images online (e.g. on such phenomena as the following: Hurricane Katrina 2005, the tsunami of 2004 on the coast of Southeast Asia, the earthquake in Haiti in 2010). The Virtual Museum of the City of San Francisco uses the photos from the 1906 earthquake on its home page, applying an element of tragic history to marketing (Virtual Museum of the City of San Francisco).

The method of reporting events has an impact on tourism. Despite the appearance of the disaster, the tourists with purchased transport to the destination decide to go (Różycki 2006), often becoming unknowing participants of the tourism associated with natural disasters.

Extreme events stay in our history. Once passed from generation to generation, they fit into culture in the form of

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Table 1. Natural disasters and the number of tourists in selected countries

	Disaster	Country/city	Year Number of tourists	Year Number of tourists	Year Number of tourists	Year Number of tourists
1	Tsunami 2004	Thailand	2003 10 082 000	2004 11 737 000	2005 11 567 000	2006 13 822 000
2	Tsunami 2011	Japan	2008 8 351 000	2010 8 611 000	2011 6 219 000	2012 8 368 100
3	Earthquake 1995	Japan, Kobe	1994 3 468 005	1995 3 345 274	1996 3 837 113	1997 4 218 208
4	Earthquake 2010	Haiti	2008 258 000	2009 387 000	2010 255 000	2011 349 000
5	Hurricane Katrina 2005	USA	2003 41 218 000	2004 46 086 000	2005 49 206 000	2006 50 977 000
6	Volcano eruption 2010	Iceland	2008 502 300	2009 493 940	2010 488 622	2011 565 611

Personal study based on information from the World Bank, UNWTO/MKT, Japan Tourism Marketing Co., Icelandic Tourist Board.

stories and paintings. Today, they are an important element of education and are becoming an element of tourism. Older tourism sites include Pompeii and Herculaneum, where tourists can learn about the history and aspects of the volcanic activity of Vesuvius and experience the unique attraction of seeing casts of human remains preserved in volcanic ash. Another example is the Watersnood museum in the Netherlands, which was built after the flood in February 1953, and presents photographs from the tragedy. There are numerous similar places, including the educational centre of Mount St. Helens Volcano in the Mount St. Helens Institute in the USA, or the Jaggar Museum in Hawaii. Furthermore, there are numerous websites, including the "Faultine: Seismic Science at the Epicenter" website, which is dedicated to seismic activity and refers to the historic earthquake of 1906 (Faultine: Seismic Science at the Epicenter). After the flood in Johnstown, Pennsylvania, USA in 1889, the surviving locals decided to commemorate the event permanently, providing information for future generations (Foote 1997; Yuill 2003). Many cities have preserved the historical marks – "the marks of the great flood water" – on church and house walls, monuments, and levees. There are also numerous commemorative signs in Poland, which inform of the water level and the date of the event, like the one erected in Wrocław after the flood in 1997.

To this day, volcanoes play a special role as the source of creative emotions. Etna was associated with thinkers – Empedocles (5th century BC), Plato (4th century BC). They were visited by Polish artists – the writer and painter Cyprian Kamil Norwid (1843, 1869), the writers Juliusz Słowacki (1836), Julian Ursyn Niemcewicz, Stanisław Staszic (Wąsowska 2008), European painters such as Scipione Compagno – painting from 1631 (Guidoboni 2008), Pierre Jacques Volaire (Le Chevalier Volaire), works from the 1770s, documenting the events (Nazzaro 1999), local artists. Volcanoes are elements of culture and religion (e.g. Fuji), and have been preserved in the paintings from the first half of the 19th century by Katsushika Hokusai (Summit 2010) and others, in graphic art and postcards (Mount Hood in Oregon from the second half on the 19th century (USGS 2013) and photographs – Kilauea (1924), the Canary Islands in 1865 (RSLP), the tourism functions of Vesuvius with the use of cable cars on the photos by Thomas Cook from 1880 (Smith 1998), numerous aesthetic travel materials published online.

Human reactions to natural hazards and disasters

Extreme natural phenomena affect the periodical reduction of interest in a tourist region. This can be observed, particularly in foreign traffic, regardless of the genesis of the phenomenon (natural, anthropogenic). One notable occurrence was the reduction of tourist traffic following the terrorist attacks of 11th September 2001 in NYC. This is similar in the case of natural disasters (Tab. 1). There is reduced interest in the destination in comparison to the previous year, which lasts several months, one year, or even two years, and translates into financial losses on a local and even regional level. According to BHA/Barclays Trends Hospitality Business, after the outbreak of the focus and epidemic of animal foot-and-mouth disease in England in February 2001, the number of tourists arriving in hotels in England dropped by 75 %, in Scotland by 81%, and in Wales by 85%, while the effects of the disease were visible after its focus was extinguished, at the level of 60% until the beginning of the autumn (GDRC).

Regardless of extreme events, the general number of tourists is rising. For example, 25 million active foreign tourists were recorded in 1950, and 687 million in 2000 (Wysokiński 2007), which is accompanied by the creation of new tourism destinations and types. Tourism has been one of the three main economic branches of the world during recent decades, and generates 9.3% of the global GDP (WTTC 2012), while 2011 foreign recreational travels constituted 51% on a global scale (UNWTO 2012). This particular group of tourists shows the most sensitive reaction to disasters, in contrast to business and professional tourists – who compose 15% of foreign travels (UNWTO 2012). During the first three months after the tsunami of 11th March 2011 (between March and June 2011), the numbers of tourists arriving in Japan were 70% lower in comparison to the parallel period in 2010 (i.e. the period between March and June 2010). Recreational visits dropped by 42% in comparison to the parallel period of 2010, and this drop lasted between March and August of 2012 (WTTC/AWT&T 2011). It is interesting that in this case, there was a simultaneous advantage of the reduction of tourism arrivals compared to recreational arrivals, which does not confirm the aforementioned trends observed by UNWTO. One can assume that the tourist behaviour resulted from concern over the potential extensive radioactive contamination produced by the destruction of the Fukushima nuclear power plant, which

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Table 2. Number of tourists visiting selected countries in individual months of 2005

Month	Dominican Republic	Jamaica	Cuba
January	336 746	116 844	238 729
February	331 651	123 022	232 938
March	369 991	155 103	252 009
April	298 746	123 578	215 757
May	249 561	110 821	142 354
June	303 950	132 710	140 868
July	412 849	151 289	199 129
August	319 705	117 898	189 692
September	195 593	72 926	146 286
October	219 649	87 467	151 782
November	268 759	121 740	192 491
December	383 492	165 265	217 299

Source: Caribbean Tourism Organization.

occurred during the tsunami. The eruption of the volcano located under the Eyjafjallajökull glacier in Iceland on 14th March 2010 reduced tourism traffic by 49% until 28th April 2011 (Jónsdóttir 2011).

Variable time ranges in the effects of individual phenomena can be observed. In the case of hurricanes, the average time range is between 10 and 27 months (in extreme events reaching up to 42 months). For tsunamis, this time is between 11 and 12 months (in extreme events reaching up to 14 months), while in the case biotic phenomena (e.g. various types of epidemics) it is between 9 and 12 months (in extreme events reaching up to 15 months) (Oxford Economics/Tourism Economics). In general, the length of the effects of anthropogenic disasters exceeds that of the effects of natural disasters.

In the analysis the Caribbean region, for example, there were four occurrences of tropical cyclones between July and October, between 3 and 5 on the Saffir-Simpson scale: Emila, Katrina, Rita, Wilma. Not all of them had an impact on the changes of tourist behaviours in the selected countries (Cuba, Dominican Republic, Jamaica). In this area, the typical months with increased tourist traffic from the regions of the northern hemisphere are those between December and April, as well as July and August (Strzelczyk 2008). Comparing the number of tourists visiting a destination in relation to the previous months in 2005, the reduction of interest occurred in one of the months attractive to tourists – in August. This was the month of Hurricane Katrina (Tab. 2). The greatest reduction of the number of visitors took place in Cuba, where Hurricane Denis cut through the northwest part of the island in June, and Hurricane Katrina passed by the coasts of the same part of the island in August. However, such fluctuations were not reflected in the total annual number of visitors to a given country, with the exception of Cuba. Nonetheless, the reduction of the arrival of tourists to Cuba is hard to associate purely with the conditions of the natural environment, since the following two years also presented weakened interest in visits (in 2006: 2 220 567 visitors, in 2007: 2 152 221 people, compared to 2005: 2 319 334 visitors) (Caribbean Tourism Organization 2008; Association of Caribbean States 2007), and these years did not host any strong natural phenomena in the region. The reduction of the numbers of visitors to the discussed islands was also visible in September, when Hurricane Rita came through, and September and October in Jamaica, when Hurricane Wilma passed by the south part of the island (Tab. 2). The reduced numbers of tourists in these countries in 2002 (Caribbean Tourism Organization 2008; Association of Caribbean States 2007) should be associated with the general disturbances in tourism resulting from the 2001 terrorist attack in New York.

The analysis shows that only the strongest occurrences of natural phenomena are a barrier to tourist visits; however, the reductions of tourist traffic usually do not reach even the lowest values of those months that are not among the key ones for the tourism seasons. This indicates the maintenance of a certain level of interest in the region, despite the occurrence of the dangerous phenomena.

Much like in the Caribbean, the comparison of the number of tourists arriving in Thailand on a national level in the case of the tsunami near the end of December 2004 does not precisely reflect the process of the events occurring after the disaster. The differences become visible with the analysis of the smaller administrative units (the Southern Province – Krabi, Phang Nga, Phuket) (Sochal 2012). The statistical regularity on a national level returned two years after the disaster (Tab. 1), although the differences lasted for a longer time locally. The tourists and foreigners first returned to Krabi, in 2006, where the change in 2005 compared to 2004 was -18.7% for Thais and -62.7% for foreigners, and Phuket (for Thais, the parallel change was -8.4%). Meanwhile, the inflow of tourists was reduced in the case of foreigners in Phuket (the change was -63.1), while the number of tourists arriving in 2006 (2 827 852 people) did not exceed the number from 2004 (3 432 741 people). Phang Nga failed to reach the 2004 statistics after two years (parallel, -12% for Thais and -88.5% for foreigners). The number of Thais arriving in 2006 (306 046 people) did not exceed the number of 2004 (495 985 people). This was similar in the case of foreigners, where two years after the tsunami the number of visitors failed to reach half of that from the year of the disaster (151 530 people in 2006, 343 523 people in 2004). The situation in the region was diverse from this perspective. The number of arriving tourists rose in India (a parallel change of +13.2) and Malaysia (a parallel change of +4.6), and dropped in the following destinations: Maldives (-35.9%), Bangladesh (-23.4%); it was also felt in Indonesia (-6.0%), Burma (-4.0%) and Sri Lanka (-3.0%) (Tourism Authority of Thailand).

The number of accommodation places in the provinces of Krabi and Phuket returned to the state of before the tsunami after only 2 years. In Phang Nga, where over 50% of the tourism base was destroyed, numerous buildings remained in the same state after three years. In the area of these three provinces, the number of tourists reduced by almost half one year after the disaster. Taking only foreigners into account, this value exceeded 60% (Sochal 2012).

One of the factors in the group of Asian tourists deciding to abandon their plans to go to Thailand (even six months after the event) was religious belief, referring to the bodies of the tsunami victims trapped in sediment and rubble (Cohen 2005).

It should be noted that the reduction of interest in a region among visitors is significant, but never reaches zero level. Therefore there are, despite disasters, extreme difficulties, and even information advising against going to the area of the disaster, for unaware tourists (realising the trip to not lose the money invested in the transport and voyage) and/or aware tourists (who purposely travel to the site of the disaster). E. Cohen (2005) discusses the specific cases of the share of foreign tourists emotionally bound to the location in rubble clearing and

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local reconstruction of the disaster sites; however, statistical separation of these two groups is impossible in today's data collection system.

Therefore, we are dealing with a dualism of extreme natural phenomena, which create antagonistic results: on the one hand, hazards, destruction, and barriers to tourism traffic; on the other, leading to the reconstruction and development of a new form of tourism (dark tourism). In the long term, they assist the creation of new economic conditions for the destroyed area (which is parallel to the situation following a war – destruction, followed by a phase of creating a more innovative infrastructure and investments).

In the case of the tsunami on the coasts of Thailand, islands such as Phuket, Phi Phi, or the Khao Lak resort were subjected to specific regeneration through natural destruction and reduction of the number of buildings, and the new sand deposits on the shorelines. This allowed the restoration of the lost or degraded landscape values of these locations (Cohen 2005).

Natural hazards and catastrophes from the perspective of the form of tourism (tourism definitions, forms, and values)

Tourist interest in natural hazards (such phenomena as earthquakes, volcanic activity, flooding, avalanches, landslides, tornadoes, storms) and disasters (such as Hurricane Katrina, the 2004 tsunami in the Indian Ocean and the 2011 tsunami in the Pacific Ocean, the Haiti earthquake of 2010) rouses reflection and concern. Can they be entered into a new tourism trend and referred to as a new form of tourism? Is this supported by theoretical and practical premises?

The authors of numerous publications have dedicated their attention to tourism and its criteria of distribution, as well as the development process, including Alejziak 2000, Gaworecki 1997, Gunn 1988, Liszewski 1995, Middleton 1996, Kowalczyk 2001, Kożuchowski 2005, Jackowski 2004, Przecławski 1996, 2004, Różycki 2006, Kurek 2007, Jędrusik, Makowski & Plit 2010. Due to the inseparability of the forms of tourism, they are often difficult to distinguish. The new forms of tourism are the answers to social demand, while their diversity is growing (Różycki 2006). They include the opportunities to visit places of potential risk. Exploration for contact with the dynamics or effects of the phenomenon provides tourists with the opportunity to learn about the nature of the phenomenon itself and undergo special experiences.

Active tourism holds numerous examples of activity on the edge of human safety (rafting, canyoning, scuba diving, windsurfing, kitesurfing, speleology, climbing, trekking, survival). The diversity, specifics, and originality of the tourist regions, as well as the uniqueness of the phenomena, sometimes attract tourists to areas considered dangerous. Individual emotions and experiences somewhat compensate for the risk of trips to such areas. Several specific properties of natural elements, which attract this special tourist group, can be distinguished.

In the case of volcanoes, they include their spectacular nature, popularity, accessibility, association with other attractions, and extremeness (Wąsowska 2008). The spectacular nature of the eruptions is associated with the aesthetic effects of volcanic activity. This popularity results in frequent information in mass media and educational or promotional materials, e.g. indirect use of information about the disaster by administrative centres promoting regional tourism, or the already existing popularity preserved among the tourists. This situation occurred in Thailand, which experienced a tsunami disaster in 2004, where the authorities created a museum dedicated to the event. This place, which is supported by a strong promotional campaign, attracts new tourists (Cohen 2005). A significant property is the accessibility of the object (attractions), which can be divided into two levels: for mass tourism (which is sometimes identified with hard tourism), which requires well-prepared tourist trails, and specialist tourism (associated with soft or qualified tourism). The relation to other tourist attractions in the region is significant. Climbing a volcano can be an additional attraction, complementing a visit to another location near the volcano (a nearby town or a stay in a resort combined with climbing a volcano). Extreme activity requires physical fitness along with consideration of the hazard of eruption and being in the area of volcanic exhalations, and also determines the difficulty of the tourist trail (large height difference, unstable ground, difficulties resulting from escaping gasses – concerning both breathing and visibility). Today, volcanoes are among the natural tourism attractions (e.g. Etna, St. Helens, Stromboli, Hawaii, Nevado del Ruiz, and others) offered by numerous travel agencies, and climbs on certain volcanoes are becoming more and more common.

We are observing a spatial and temporal diversity in the specific form of tourism dedicated to natural hazards and disasters. The location of these places, which are attractive to tourists, is directly associated with the genesis of dangerous or extreme phenomena. Tourists interested in natural hazards or disasters must travel to a potentially hazardous area or a place which was once the centre of an extreme phenomenon and natural disaster, often choosing the appropriate time of year (this is particularly associated with hydro-meteorological conditions, e.g. the tornado season in the USA, which usually lasts between May and June, depending on the region. There is a time-based diversity in the tourist interest of dangerous natural phenomena. Interest in phenomena in the following time spans can be observed:

1. In the distant past, e.g. on the trail of cosmic collisions (the Barringer Crater, which is called a meteorite crater, formed approximately 25 000 years ago in today's Arizona, the Chicxulub Crater near the Gulf of Mexico and the Yucatan Peninsula, which is visited by researchers, the group of seven craters in the Morasko Reservation in Greater Poland, the craters of the extinct volcanoes in the Massif Central in France, the historical marks of the great flood waters in many historical cities located directly on rivers, e.g. Loire, Vistula, Oder.
2. A long time following the event (e.g. the active Bromo Volcano in Java, Indonesia, Mount St. Helens in the USA, Vesuvius, the Tunguska event), or a combination of the aforementioned properties – the old caldera of the supervolcano with active volcanoes in the Yellowstone National Park.
3. Shortly after the event (when direct traces, or even drastic signs, are still visible), after a disaster, traces of water levels after flooding, the Chelyabinsk event – meteor shower.
4. During the event, but before the disaster (during the phenomenon – observation of tornadoes, atmospheric discharges).

Natural elements and natural phenomena are factors which affect tourism. One of the most important elements of the evaluation of the regional usefulness for tourism is the determination of its advantages, including natural values. Dynamic natural events are also a peculiar natural value and translate into tourism attractiveness. For example, regardless of the professional nature of their operations, "tornado hunters" – starting in the USA (their imitators are also found in Poland) – are often located at a very dangerous distance from the occurring phenomenon, in order to observe, collect physical information, or record (depict) them in a specific way. This is similar in the case of photographers of weather effects such as lightning, who intentionally choose such regions as the Gulf Lowlands, Florida, central lowlands of Argentina, the Democratic Republic of

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Congo, the southwest coast of West Africa, the Malay Peninsula, and Sumatra (Earth Observatory 2006). The Russian region near Chelyabinsk became known throughout the world after fragments of an asteroid hit the Earth. Despite the creation of numerous injuries and material losses, potential tourists arrived shortly afterwards, and the region began to produce a strategy of promoting the location and to contemplate possible benefits from tourism (Gates 2013; The Huffington Post Destination 2013).

There are also those who travel to the location of a natural disaster after the event in order to see the risk and disaster area in person. Information on this subject can be found in various materials, and these facts are difficult to omit. The lack of methodically maintained statistics prevents detailed analysis. We can only derive from indirect information. Following the natural disaster of hurricane Katrina in 2005, "disaster tourism" appeared. At that time, there were observations of contradicting positions in various communities. In some, the local population worked against the groups of tourists visiting the areas of destruction, by e.g. putting up large signs directed towards the visitors, which were photographed by Kiara T. Caviness of the Michigan State University (Wade 2011). In some districts and parishes, due to the dangerous conditions (mainly shortages of power and the communication infrastructure) within the first six months following the disaster, tours were prohibited. Others, such as Gentilly and Lakeview, consciously allowed tours, considering them a good form of information for the broader society on the scale of the destruction, which was intended to have a stronger effect on the authorities of New Orleans, the state and the nation in order to procure aid (Yarnal 2007). They also had an impact on the assistance of volunteers, donations (so-called out-of-state) and humanitarian, charity, non-profit aid from international organisations.

Another symptom of "disaster tourism" was the reactions of tourists just after the first eruption of the volcano under the Eyjafjallajökull glacier in 2010. The extensive media information affected the interest of this specific group of tourists. Just 24 hours after the eruption, travel agencies offering trips to Iceland began to receive questions from all over the world from tourists interested in the recent eruption (Robbins 2010). The delay of flights in Great Britain due to the presence of the volcanic cloud prevented the arrivals of potential tourists and their access to the destination in Iceland (Batty 2010). They began to appear after the reopening of air traffic.

In tourism, safety has a certain degree of significance. For example, maritime tourism is considered safe (travelling on luxurious ferries equipped with numerous recreational attractions with a high service quality). Following 11th September 2001, tourists tended to choose sea liners, considering them safer than airlines (Różycki 2006). However, it should be noted that maritime tourism also covers forms which contradict safety, such as kayaking and canoeing, kitesurfing, windsurfing, or sailing, which produce deaths each year. According to data for the USA, there is a growing trend of drowning resulting from tourism such as kayaking and canoeing (twice as many drowning than on sheltered motorboats, almost three times as many as on pontoons, almost four times as many as on jet skis) (U.S. Coast Guard 2012). In the case of natural hazard and disaster tourism, safety is not important. On the contrary, a risk is taken to reach the chosen destination.

Considering that the natural attractiveness of locations is relative and depends on the tourist, age, nature of work, and everyday environment (Gaworecki 1997), in the case of extreme phenomena and natural hazards, it may also depend on the level of education and the knowledge of the tourist. If, following the opinion of W.W. Gaworecki, we accept that the tourist attractiveness of a natural environment is determined by such measures as the average rainfall, average number of sunny days in a year, area of forests or waters, etc., in this case we can add the presence of tornadoes, their number in a year or month, volcanic activity, number of atmospheric discharges in a month or year, etc. We can find tourists whose diverse values will indicate an opposite value for tourism (for some, the presence of active volcanoes will reduce the value of a potential tourism area, for others, it will increase). Therefore, the phenomenon itself, including a natural phenomenon (an unusual, amazing, emotional fact or event) can constitute a natural value. Progressing along this train of thought, to a certain, special group of tourists, a phenomenon or the strong effects of a phenomenon, which can be observed through close presence in its area or among the community experiencing it, can be a natural value raising the tourism attractiveness of the area.

This approach falls under special values (Różycki 2006). Presence in areas of risk after the appearance of an extreme phenomenon has an element of emotion. It is similar in the case of ethnic (reflexive) tourism (of that a religious-cognitive nature: prayer, contemplation, but also sightseeing; when the proportions are opposite, it becomes landscape tourism) and pilgrimage tourism (where the essence of the voyage is prayer, contemplation, personal reflection), or in cultural tourism (visiting amusement parks) or entertainment tourism (the emotions are different – joy, laughter, tension), and cultural tourism during experiences of historical locations (emotions stimulating reflection).

In the search for the place of the discussed subject in the broad field of tourism research, one can refer to the concept of J. Kripendorf, which distinguishes hard and soft tourism (Alejziak 2000). The general aspect of natural disasters fits with the forms falling under soft tourism, where there is a place for individual tourism or travel in small groups, with potential for individual and spontaneous scheduling decisions, and the presence in an area of risk requires activeness and sometimes skill. Natural hazard and disaster tourism provides acquaintance, emotional experiences, new experiences, life in a local community with the acceptance of minimum expectations, adaptation to the existing conditions, and respect of the local nature. This new form of tourism also satisfies the conditions of alternative tourism – contact with a specific type of nature, and its particular elements and phenomena (e.g. the dynamics of the phenomena), and with the local community, while the tourist belongs to a group expecting the achievement of the intended destination (reaching the area of risk or natural hazard, extreme natural phenomenon, or the occurrence of a natural disaster or catastrophe). Similarly, it also satisfies the conditions of qualified tourism, which fulfils the cognitive need for knowledge about the geographic environment for people with precise and special interests, ensuring a change in everyday lifestyle and requiring physical and mental fitness of the tourist. It also satisfies the conditions of active tourism.

Referring to the work of W.W. Gaworecki (1997), the following associations with the criteria of motivation can be found: physical (no reference by Gaworecki; however, it requires skill and the will for physical activity), mental (the need for emotion and sensations, as well as diversity; emotional endurance), cultural (seeing the country or region, but in selected and specific locations, i.e. hazardous or risky areas). Not all motivations can be fitted into the types of tourism suggested by Gaworecki (1997): there is no adequate reference concerning physical motivation. Continuing, this is sensation and cultural tourism (since it is a type of educational tourism).

With the application of the criterion of motivation from the creator of the demand (Gaworecki 1997), this form of tourism can be included in cultural (cognitive, alternative) and contemplation

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Table 3. Distribution of natural hazard and disaster tourism according to subject properties

	Distribution according to subject properties	Natural hazard and disaster Tourism
1	Number of participants	Individual tourism, tourism limited to groups.
2	Age of participants	Tourism of physically fit and active people.
3	Length of stay	a. short-term, b. long-term.
4	Season/period of the year	Independent of the season, but dependent on the dynamics and period of the occurrence of natural phenomena (during the year, season).
5	Type of accommodation	Insignificant, depends on the situation of the destination.
6	Means of transport	Insignificant, depends on the situation of the destination.
7	Effect on payment balance	Foreign arrival (active) tourism; a. Commercial, b. Non-commercial (voluntary service).
8	Financing mode	a. private trips, b. commercial trips.
9	Sociological aspect	Tourism demanding psychophysical skill, exclusive tourism (in the sense of a commercial climb of Mt. Everest).
10	Travel organisation	Individual tourism (organised or not organised by a travel agency, local guide).
11	Travel behaviour	a. "Rational", "enlightened" tourism, b. "Irrational" – inadequate, unethical behaviour of "sensation seekers".
12	Emotional involvement aspect	a. Aware, b. Unaware.

Personal study based on W.W. Gaworecki 1997 and P. Różycki 2006.

tourism (not necessarily related to religion or pilgrimages, but requiring concentration, seriousness, recognition of the memory of the location and the victims in their place of death).

Distributing tourism according to the subject properties (Gaworecki 1997; Różycki 2006), it is possible to distinguish the following forms of tourism, which cover natural hazard and disaster tourism (Tab. 3).

Natural hazard and disaster tourism covers a group of factors determining the undertaken tourism activity. The following properties of natural hazard and disaster tourism are defined on the basis of delimitation of travellers' reasons for undertaking tourism, according to M. Pirveli (2008) (Tab. 4).

The numerous forms of tourism also include those unacceptable from the point of view of ethics, such as sexual or abortion tourism (Różycki 2006), which lead to the intensification of the state of social pathology. Despite the functions providing the opportunity for existential survival in extremely difficult social conditions, the final results are disturbing. There is a dual nature of the phenomenon observed in the event of natural disasters and natural catastrophe tourism, since the ethics of travelling to a natural disaster site right after its occurrence are debatable. This may result from the human reaction of sympathy (of a positive nature), interest (positive), and curiosity and gawking (negative) or the will of at least partial participation in a socially significant event (positive). The theoretical contemplation of the issue refers to the study of M. Pirveli (2008), who believes that the diversity of the destination is conditioned by the diversity of tourism values and the needs of individual tourists. Based on the definitions of other authors (Kowalczyk 2001; Różycki 2006, and others), it can be stated that tourist values include the properties or elements of the geographical environment, which are usually divided into natural, and beyond natural or cultural (Kowalczyk 2001; Różycki 2006), raising the interest and curiosity of the tourists. Their presence in a given location determines the tourism attractiveness of that place. The level of attractiveness of tourism values is relative (Gaworecki 1997). The significant values usually include the quality of the environment and aesthetics, but sometimes dynamism as well. This is decided by psychophysical conditions and the subjective perception of tourism attractiveness. "The needs also become the objective of the search for a place rich in that something, which can provide the individual with a given need. (…) something causing the individual to travel to a specific location in order to consume the value (area, object, event, service). A tourism value perceived in this way can be anything encouraging the individual (visitor) to come to a given place. It can be an object, an event, as well as a type or quality of provided services. (…) everything, even something negative in its essence (e.g. a funeral ceremony). (…) each location, even that with no positive values, may be represented by magnets encouraging visitors (a particularly littered location can become the destination of cyclical trips of waste management experts, who will search for the methods to cope with such waste volumes on site)" (Pirveli 2008, p. 56). Tourism value is temporal – much like e.g. a tornado, effects of disasters, including natural disasters. However, it is sometimes adapted and transformed into places commemorating the events, such as museums or centres of education, acquiring a permanent nature.

Contemplating the ethical aspect of travel to disaster sites and direct observation of the social phenomena occurring there, one can see the analogy towards the research method, the so-called secret observation (from hiding), which is applied in social research and is considered dubious from the ethical point of view.

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Table 4. Reasons for undertaking natural hazard and disaster tourism

Causes for tourism	Specific properties of natural hazard and disaster tourism
Need to change location	Spatial mobility (space and time compression).
Recreational needs	Individual preferences.
Cognitive needs	Global interest in the world (natural hazards and catastrophes), information on natural hazards and catastrophes reported by the mass media or in official and unofficial education, need for direct observation and contact with the object of interest, realisation of individual interests.
Need for human contact	Contact with people harmed by natural disasters and catastrophes from different social classes, representing various religions and traditions.
Need for new experiences	Experiencing emotions (positive, negative), tension different than that at home and at work, affecting the stimulations of sensitivity, reactions, actions.
General social needs	Expansion of social awareness of natural hazards and disasters.
Additional tourism conditions	Economic status (wealth), need to act (aid others).

Personal study based on M. Pirveli (2008)

Table 5. Functions of natural hazard and disaster tourism

No.		Positive functions	Negative functions
1	Physical	Physical activeness – during trip.	Possibility of health or life loss – during and after the trip (diseases, epidemics).
2	Mental	Emotional experiences stimulating pro-social action; providing emotional support for victims of natural disasters – during trip, after return.	Experiencing emotional shock, providing negative feelings to victims of a natural disaster – during trip and post-trip trauma.
3	Economic	Shopping in a region which experienced a disaster, leaving money there in order to assist in the survival and restoration of the pre-disaster state – during trip.	None – spending own money.
4	Educational	Learning about the phenomenon, its dimension, range, intensiveness, and natural and social effects; sharing own experiences after returning home; humanitarian actions – before, during, and after trip.	None.

Personal study

In this case, the observed subjects are unaware that they are being observed, thus making their behaviour 'more natural'. This method prevents the subjects from refusing to be studies. Those touched by disaster are sometimes in a similar situation, as they are weakened and exposed in their tragedy and may not have the opportunity to express objection towards their observation, photographing, and video recording, which are currently present in tourism.

At this point, one can refer to Keller and Vecchio's theory (2011) of the stages of the risk area's return to regular functioning after a disaster. The presence of tourists a short time after a natural disaster (the first stage of returning to balance – rescues) may affect the intensification of the chaos and is not desired. However, over a longer time span (stage two – returning activity), the presence of tourists may be perceived positively from the economic viewpoint – their money helps to return the site to its state before the disaster. The longer the time after the disaster, the fewer doubts concerning the ethical aspect of visits to the sites of the tragedy. The development of tourism in the third stage (rebuilding) is desired, and includes the educational aspect, which accompanies the economic aspect.

Such catastrophes affect touristic activity. In the Costa da Morte case, despite existing ethical aspects, the arrival of volunteers during the months that followed the catastrophe became one of the explicative factors for the increase in overnight stays in the area (Castro & Rodríguez 2009).

Is natural disasters tourism anti-humanitarian? The analyses of various aspects provide the conclusion: no. As noticed by Różycki (2006), the lack of tourists after a disaster may multiply its effects, increasing losses. For a tourist region located in the area of risk, this deteriorates the economic and social situation of the locals. However, this should exclude the unethical and thoughtless behaviour of emotionally immature tourists in individual cases. Similarly, contemplation of the tourism function of the risk area can also be examined from the point of view of ethics.

Tourism is a spatial phenomenon, fixed in time. The properties associated with the location of the phenomenon are subject to change. The direct effects can only be observed a short time after a natural disaster. Sometimes preserved as symbols, they become a permanent tourist attraction (marks of high water, architectural elements spared by the cataclysm, etc.).

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Natural hazard and disaster tourism is contrary to environmental emigrations, which are caused by so-called rapid phenomena (e.g. natural hazards or extreme natural phenomena, such as the Pinatubo eruption in 1991).

The nature of the functions of natural hazard and disaster tourism is threefold, depending on space, time, and people (Tab. 5).

Conclusions

What is the significance for the development of tourism of human interest in natural hazards and catastrophes? Tourism, which is an extremely flexible symptom of human activity, is attempting an unconditional "arrangement" of the rising interest in natural hazards and disasters. However, is this really a new trend in tourism? Until recently, it seemed that the relatively low numbers of tourists taking part in such activities did not warrant the allocation of a new type of tourism. However, this situation was changed by human curiosity, or the proverbial gawking, skilfully stirred by the media. Despite the continuously small economic relevance, the increase of interest in tourism to sites of natural hazards and disasters has been observed and is becoming more commonly arranged by travel agencies. The moral dilemmas arising in terms of the ethics of watching someone else's misery do not seem to be related to the natural phenomena themselves. These issues are unusual, but compliant with the natural order of things. Human interest is attracted by the unordinary and spectacular in the manifests of nature. It is not good if this interest translates into the human dimension of such events, particularly if this is a shallow interest, limited to taking photographs with human misery in the background. This type of travel aimed at satisfying curiosity of a natural disaster or catastrophe is often defined as disaster tourism (according to the Travel Industry Dictionary, it is a trip with the intention of visiting and seeing the disaster site). If the dominating desire concerns the observation of the difficult situation of people, it should be referred to as dark tourism.

What is and what is not natural hazard and disaster tourism? It is the opposite of other forms of tourism, which value undisturbed space and a preserved natural environment, with a visible lack of impact on the environment. It is the opposite of recreational tourism or ecotourism. The quality of services, which is significant in business or congress tourism (business class travel), is insignificant. The diversity of natural hazard and disaster tourism is based on the dynamics of the phenomena or level of effects which are attractive to tourists, while their value may disappear, producing their uniqueness. The location is also important – but for different reasons than in the case of e.g. congress tourism (which falls under specifically defined locations – centre, easy transport links, outskirts, landscape). In this case, the location is determined by the genesis of the phenomenon and the risk area. A certain analogy towards business tourism may be seen, due to the initial refusal to regard it as tourism. However, due to the utilisation of the typical tourist infrastructure and tourism developments, this form falls under tourism travel.

Disaster tourism, specifically natural disaster tourism, finds common elements with dark tourism, since some of its symptoms are already transforming into this category. They include the observation of destruction and even human remains produced by catastrophes. A property specific to natural disaster tourism is the extreme difficulty in finding the limits of this activity. Research certainly does not allow the determination of the motivations of tourists and reporters travelling to the tragedy sites. Is this about obtaining and sharing knowledge, or instead an unethical attempt at entertainment or easy-to-sell information? However, even such trips similar to dark tourism have some positive aspects, in the form of providing the information to allow the undertaking of aid and education.

There is no chance of natural hazard and disaster tourism acquiring a mass nature. The temporal uniqueness and difficult accessibility require great mobility and motivation to take such trips. This is emphasised by its elite or specialist nature, which leads to a further growth of interest amongst a small group of targets, who want to be "extreme tourists".

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