A Study on Area Management through the Promotion Council to Utilize Disaster Wreckage for Regional Development after Volcanic Disaster Recovery - Case Study of the Toya Caldera and Usu Volcano Global Geopark in Japan -

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In order to mitigate damage from natural disasters and restore impoverished economies to health, it is necessary to establish a system based on a public-private partnership to provide education on disaster prevention and to promote tourism so that people can learn about and experience the ferocity of nature and the history of disasters. Geoparks are establishing such a system through a "promotion council" in Japan. This study aims to utilize disaster wreckage for education on disaster prevention and for tourism promotion by building a network of disaster wreckage and a promotion council that will carry out geopark activities. This initiative is referred to as "area management through the Promotion Council." This study aims to clarify the purpose of the Promotion Council, as well as its role and management method, in utilizing the disaster wreckage for regional development through geopark activities based on public-private partnership in stricken areas after recovering from a volcanic disaster. It identifies the benefits of providing education on disaster prevention and promoting tourism through the Promotion Council and also identifies issues to be addressed when multiple local governments plan and implement wide-ranging area management. The study covers the Toya Caldera and Usu Volcano Global Geopark Promotion Council in Japan. In addition to university researchers, this council comprises representatives from four local governments, a prefectural government, two ministries, tourism associations, private companies and citizen groups. The study involved a review of relevant literature followed by interviews with local government officers, researchers, and representatives of citizen groups, as well as visits to related sites for direct observations.

The results of the field studies are as follows: 1) Taking into account changes in the relationship between public and private sectors, the purpose of the Promotion Council is to create a new communities contributing to the sustainable development of areas affected by disaster. 2) Taking the relationship among universities, citizen groups, private companies, and local governments and the Promotion Council into consideration, the role of the Promotion Council is to utilize the disaster wreckage and museums for education on disaster prevention and tourism promotion, coordinate with local governments and citizen groups, and form a system for the public/private sector partnership. 3) Based on income and expenditure reports included in the general-assembly materials, it can be seen the management method of the Promotion Council is to secure stable financial resources supported by public funds. The benefit of planning education on disaster prevention and promoting tourism through the Promotion Council is the forming of close partnerships between local governments, universities, private companies, and citizen groups. When several local governments plan and implement wide-ranging area management, the prefectural government is to establish the direction of the recovery plan and to be involved in the establishment of the Council. The Promotion Council is set up by local governments and citizens to find stable resources supported by public funds.

Keywords: *area management, disaster recovery, regional development, promotion council, geopark*

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1. Introduction: Background, Aims, and Method

In order to mitigate damage from natural disasters and restore impoverished economies to health, it is necessary to establish a system based on a public-private partnership to provide education on disaster prevention and to promote tourism so that people can learn about and experience the ferocity of nature and the history of disasters. Geoparks[1] are establishing such a system through a "promotion council" in Japan. This study aims to utilize disaster wreckage for education on disaster prevention and for tourism promotion by building a network of disaster wreckage and a promotion council that will carry out geopark activities including investigation, research, preservation, conservation, education and geotourism. This initiative is referred to as "area management[2] through the Promotion Council."

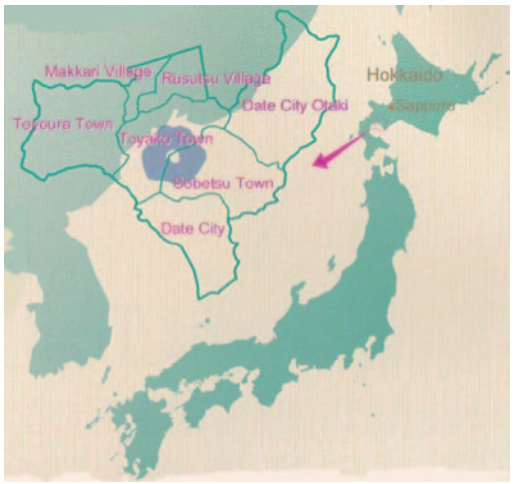


Figure-1 The investigation area[4] (The Toya Caldera and Usu Volcano Global Geopark area in Hokkaido)

This study aims to clarify the purpose of the Promotion Council, as well as its role and management method, in utilizing the disaster wreckage for regional development[3] through geopark activities based on public-private partnership in stricken areas after recovering from a volcanic disaster. It identifies the benefits of providing education on disaster prevention and promoting tourism through the Promotion Council and also identifies issues to be addressed when multiple local governments plan and implement wide-ranging area management. The study covers the Toya Caldera and Usu Volcano Global Geopark Promotion Council in Japan. In addition to university researchers, this council comprises representatives from four local governments, a prefectural government, two ministries, tourism associations, private companies and citizen groups. The study involved a review of relevant literature followed by interviews with local government officers, university researchers, and representatives of citizen groups, as well as visits to related sites for direct observations (Figure-1).

2. The area management through the promotion council to utilize disaster wreckage for regional development

2.1 Changes in relationships between local governments and communities

(1) Start-up period (from 1977 to 1999): The Laketopia 21 Promotion Council established jointly by multiple local governments

Usu Volcano erupted in August 1977. In Sobetsu Town, which was located on the leeward side of the volcano, an evacuation order was issued to the residents, who evacuated the area. However, in the Lake Toya hot spring area located on the windward side, as a result of a delay in the issuing of an evacuation order by the Toyako Town local government office, residents had to endure inside buildings within the area the falling volcanic rocks and ash. Concerned that leaving disaster wreckage in the area might scare off tourists, hotels and inns in Toyako Town and the Lake Toya hot spring area removed all soiled and dangerous materials, burying the disaster wreckage on the lakeshore (Photo-1). However, some community residents possessed materials left by Masao Mimatsu, who participated in research on the volcanic eruptions of

Showashinzan and Usu Volcano. In 1988, his descendants opened a museum (the Mimatsu Masao Memorial Museum) at a site offered by a local private company in order to pass down knowledge on volcano disasters to future generations (Photo-2・3). Subsequently, with a view to requesting the national government and the Hokkaido government to build roads and other facilities, six local governments around Usu Volcano established the Laketopia 21 Promotion Council (LT21 Promotion Council).

Photo-1 Burying the disaster wreckage on the lakeshore

Photo-2 Mimatsu Masao Memorial Museum

Photo-3 Mimatsu Masao's descendants opened the Museum

(2) Recovery plan development period (from 2000 to 2005): Recovery guidelines formulated under the leadership of the Ministry and the Hokkaido government

In March 2000, Usu Volcano erupted again from its west side. Thanks to the evacuation orders issued immediately by local governments, there were no casualties this time around. In accordance with the Basic Guidelines for the Recovery Plan (March 2001) drawn up by the Hokkaido Development Agency and the Hokkaido government, local governments around Usu Volcano adopted Ecomuseum[(4)] policies in their recovery plans. These plans included the creation of Ecomuseums with the participation of residents by making use of museums as well as local heritage, including volcano-related resources and disaster wreckage. In Toyako Town, local residents, hotel owners, construction companies and local government officers worked together and laid railroad ties provided by JR Hokkaido Railway Company around the crater on the western side of Usu Volcano to make the Trail at the Foot of Mt. Nishi-yama Crater in 2001 (Photo-4). In order to preserve the hot spring community facilities and public apartments that were affected by the hazard, citizen groups worked in collaboration with the Hokkaido government officers and university researchers to organize workshops aimed at conserving and using disaster wreckage. In response to requests from university researchers and citizen groups, the Hokkaido government subsequently opened the 2000 Eruption Remnant Park in 2004 inside a landslide prevention facility (Photo-5). In addition, a group named the Friends of Ecomuseum was established by local residents in 2004. The Friends organized guide tours and history workshops for children (Photo-6), thereby establishing close relationships with private

Photo-4 Trail at the Foot of Mt. Nishi-yama

Photo-5 2000 Eruption Remnant Park

Photo-6 Friends of Ecomuseum (Photo: Saburo Mimatsu)

companies and local governments.

(3) Urban network development period (from 2006 to 2009): The Ecomuseum Promotion Council established under local governments leadership

At a meeting for local government leaders held in November 2006, an organization called the Lake Toya Area Ecomuseum Promotion Council (EM Promotion Council) was established, with the aim of creating a new Lake Toya community network. The EM Promotion Council worked in coordination with the national government and road management agencies of the Hokkaido government in order to create a Sign Development Plan (including welcome signs, guide signs, information signboards and explanation panels) and installed Ecomuseum guidance signboards on roads and in various facilities. Subsequently, the Volcano Science Museum opened in 2006 (Photo-7), followed by the Toyako Visitor Center, which was opened in 2007 by the Ministry of the Environment (Photo-8). The Toyako Visitor Center serves as a general information center to provide information on the natural environment and volcanic hazards in the Lake Toya area for local school students and tourists. Sobetsu Town also opened the Information Center i in 2008 (Photo-9). The Information Center exhibited and stored materials related to Usu's volcanic eruptions and documents on disaster prevention. Finally, with a view to demonstrating the global value of the local heritage of the Toya Caldera and Usu Volcano area, the EM Promotion Council started operating, with the objective of having the area certified as a Global Geopark, which is based on the same concept as Ecomuseum. The Toya Caldera and Usu Volcano Geopark, created with the theme of coexistence with the changing earth, was certified in 2009 as Japan’s first Global Geoparks. Subsequently, in order to create a geopark compliant with the guidelines for Global Geoparks[5], the Toya Caldera and Usu Volcano Geopark Promotion Council (GP Promotion Council) was established based on a public-private partnership in 2010.

Photo-7 Volcano Science Museum

Photo-8 Toyako Visitor Center

Photo-9 Soubetsu Information Center i

Figure-2 shows changes in the number of tourists visiting the Geopark area. The number of tourists exceeded 9 million in 1997, but declined sharply to less than 5 million in 2000 due to the effects of the Usu Volcano eruption. In 2001, tourist numbers temporarily recovered back to over 8 million, but decreased by about one million in 2006 as a result of declines in the number of school and other group tours. In 2008, the number of tourists increased back to previous levels thanks to the Hokkaido Toyako Summit, but subsequently decreased to below 7 million and has continued to decrease since.

Figure-3 shows changes in the relationship between the Promotion Council and local communities. [6] During the recovery plan development period (from 2000 to 2005), the Ministry and the Hokkaido government took leading roles in formulating recovery policies and promoted the development of the ecomuseum plan. Based on these policies, the LT21 Promotion Council

drew up the basic plan and action plans to implement the ecomuseum plan and worked in cooperation with citizen groups to provide disaster prevention education employing disaster wreckage. During the urban network development period (from 2006 to 2009), the EM Promotion Council requested that the Ministry and the Hokkaido government open parks to conserve disaster wreckage with the aim of promoting education on disaster prevention as well as geotourism. Then, the council also worked in collaboration with museums operated by private companies to create a mutual guidance network. The EM Promotion Council also established a Scientific Review Committee organized by experts in order to apply for membership in the Global Geopark Network.

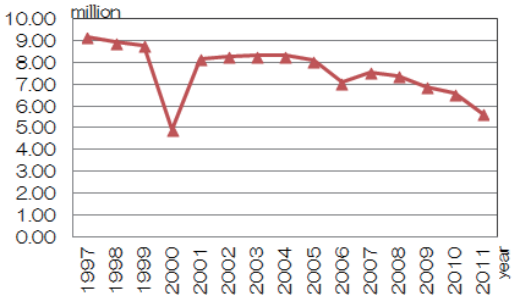


Figure-2 Number of tourists visiting the geopark area[7)8)]

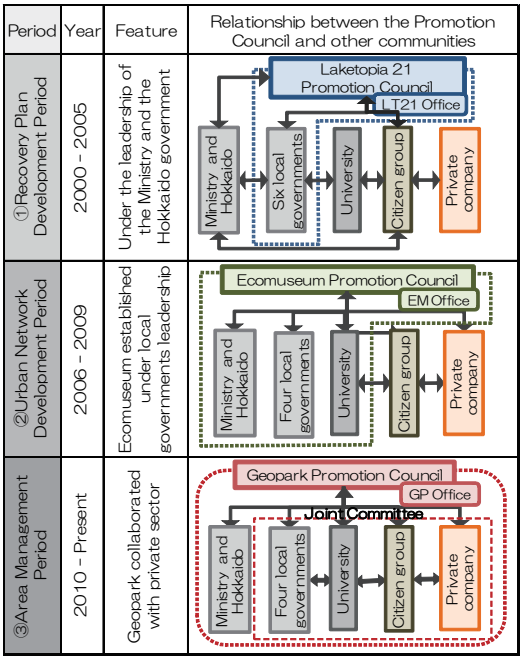


Figure-3 Changes in the relationship between the Promotion Council and other communities
(Figure prepared by the author based on an interview with the Geopark Office)

2.2 Role of the Geopark Promotion Council in the development of partnerships between prefectural/local governments and local communities

(1) Characteristics of the organizational form of the Geopark Promotion Council during the area management period (from 2010 to present)

Figure-4 shows the organizational form of the GP Promotion Council. The GP Promotion Council comprises representatives from four local governments, the Hokkaido government, the Ministry of Land, Infrastructure, Transport and Tourism, the Ministry of the Environment, University researchers, teachers, citizen groups, tourism associations, and private companies. These organizations are operated under the management of a Joint Committee. The Joint Committee consists of five committees: the Administrative Committee is organized by a prefectural and four local government offices, the Education Promotion Committee, the Guidance Committee and the Resident Committee, which are organized by citizen groups and researchers; and the Tourism Committee, which is organized by tourism associations and private companies. The newly established the GP Promotion Council organized the joint Committee in close collaboration with citizen groups and private companies in order to create a management system for public/private partnerships. The office of the GP Promotion Council (GP Office) is organized by five full-time members in total on loan from local governments so as to maintain coordination between local governments and with other organizations.

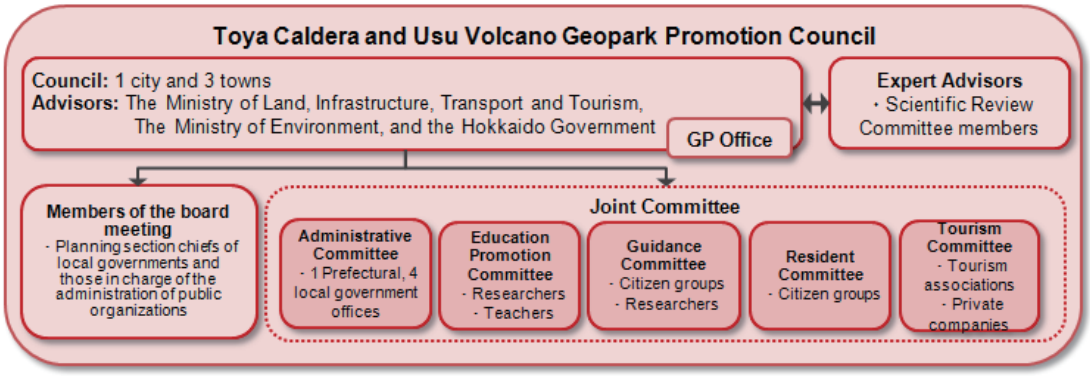


Figure-4 Organizational chart of the Geopark Promotion Council
(Figure prepared by the author based on the general-assembly materials of the Geopark Promotion Council[9])

(2) Role of the Geopark Promotion Council and other organizations

Figure-5 shows the partnerships formed between the GP Promotion Council and other organizations (Hokkaido universities, Hokkaido and local governments, private companies and citizen groups). As activities for investigation and research, the GP Promotion Council obtains research results in exchange for providing researchers of Hokkaido University with research sites. These research results are used to draw up guidelines for the conservation of disaster wreckage, to exhibit educational materials at the Visitor Center and to file applications to the Global Geoparks Network. As activities for protection and conservation of materials, the GP Promotion Council provides general facilities guidance in exchange for services from Hokkaido and local governments for the conservation and maintenance of disaster wreckage. As activities for education and geotourism, the GP Promotion Council provides citizen groups with lifelong education programs in exchange for such citizen groups providing services involving education on disaster prevention for local school students and guide tours for tourists for cleaning the Disaster Wreckage Parks. The council also works in collaboration with private companies to

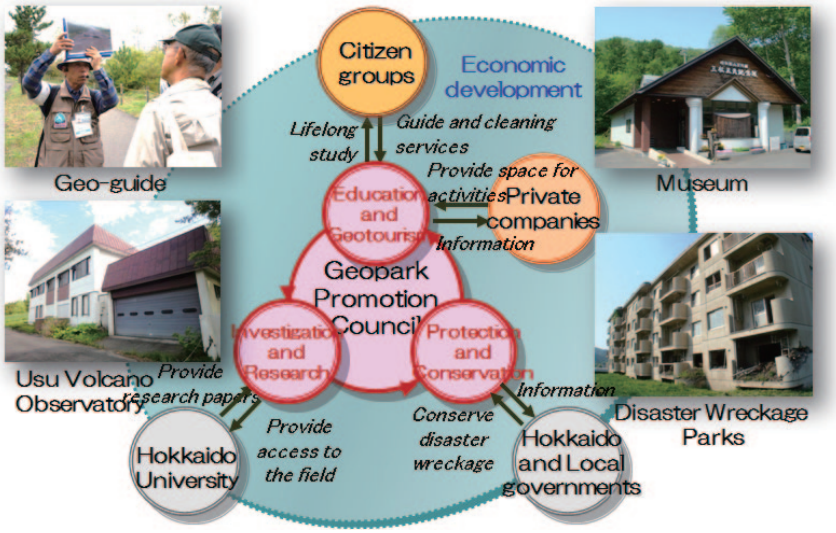
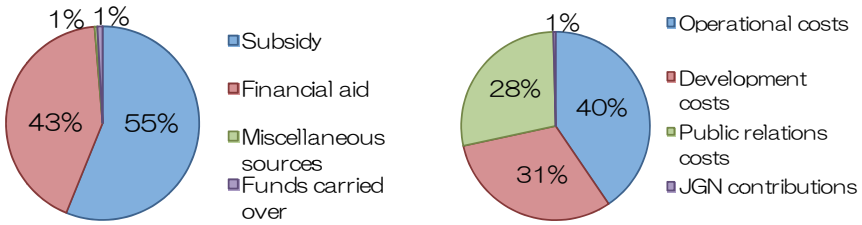


Figure-5 Close partnership between local governments, universities, private companies and citizen groups with the help of the Geopark Promotion Council
(Figure prepared by the author based on an interview with the Geopark Office)

exchange general information and to provide space for activities.

2.3 Management method of the Geopark Promotion Council in during the area management period

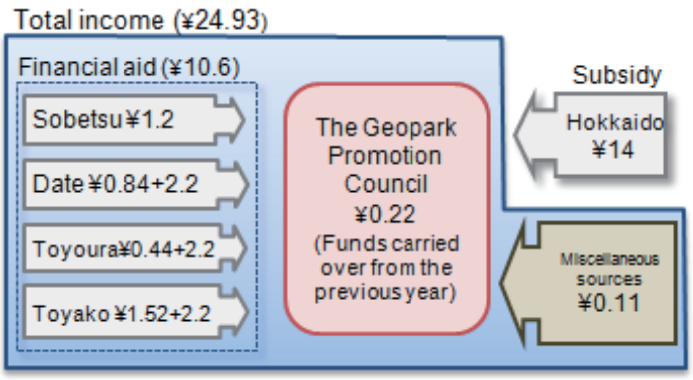
As shown in Figure-6, government subsidies account for the largest percentage (55%) of the GP Promotion Council's income, followed by financial aid from local governments (43%). Public funds therefore account for the bulk of the council's income. Meanwhile, data on the council's expenditure shows that operational costs (including personnel costs, business costs related to the Japan Geopark Network (JGN) and office expenses) account for a large percentage (40%) of the expenditure. Operational costs are followed by acceptance and development costs (including explanation board development costs, guide book preparation costs and general pamphlet creation costs), which accounts for 31% of the total expenditure, then by public relations costs (28%) (DVD and website development costs and costs for forums and geo-tours) and JGN contributions (1%). Therefore, education and geotourism costs account for about 60% of the council's total expenditure.



Income **Expenditure**

Figure-6 Balance of income and expenditure of the Geopark Promotion Council in 2010 (Figure prepared by the author based on the general-assembly materials of the Geopark Promotion Council[9])

Figure 7 shows how the GP Promotion Council was managed during fiscal 2011. The GP Promotion Council manages its own budget. Its total income for this fiscal year was 24.93 million yen, of which 10.6 million yen was financial aid from four local governments. Financial aid from local governments consists of regular aid (determined in accordance with the number of geosites and the expected number of tourists to each community) and personnel costs



(Million yen)

Figure-7 The management method of the Geopark Promotion Council in 2011 (Figure prepared by the author based on the general-assembly materials of the Geopark Promotion Council[9])

provided by three local governments. In addition, the GP Promotion Council also received subsidies from the Hokkaido government, earned income from miscellaneous sources - including sales of guide books and other goods - and also had funds for the council carried over from the previous year, to cover its expenditure.

3. Conclusion

The results of the field studies are as follows: 1) Taking into account changes in the relationship between public and private sectors, the purpose of the Promotion Council is to create a new communities contributing to the sustainable development of areas affected by disaster. 2) Taking the relationship among universities, citizen groups, private companies, and local governments and the Promotion Council into consideration, the role of the Promotion Council is to utilize the disaster wreckage and museums for education on disaster prevention and tourism promotion, coordinate with local governments and citizen groups, and form a system for the public/private sector partnership. 3) Based on income and expenditure reports included in the general-assembly materials, it can be seen the management method of the Promotion Council is to secure stable financial resources supported by public funds.

The benefit of planning education on disaster prevention and promoting tourism through the Promotion Council is the forming of close partnerships between local governments, universities, private companies, and citizen groups. When several local governments plan and implement wide-ranging area management, the prefectural government is to establish the direction of the recovery plan and to be involved in the establishment of the Promotion Council. The Promotion Council is set up by local governments and citizens to find stable resources and full time staff supported by public funds, and carry out projects.

Lastly, let us conclude by defining the possibilities that a geopark can bring to a disaster-stricken area by contributing to regional development as follows. The culture of disaster prevention can be nurtured, and local residents' awareness of disaster prevention can be enhanced through the conservation and use of disaster wreckage. In connection with this, tourism can also be promoted. Especially in Japan, which is considered a disaster-prone archipelago, disaster prevention activities need to be carried out continuously because the country needs to be prepared for the major disasters that hit once every few decades or hundred years. For this reason, it is important for each individual to have an awareness of disaster prevention. However, because individual awareness may diminish, it is necessary to organize a regional organization to ensure continuity as an area management activity. This will also lead to disaster prevention, economic recovery, and personal recovery.

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Notes:

(1) A geopark is a geographical area where sustainable development is conducted through conservation, education, and geotourism of topographic and geological heritage. [1)]

(2) Area management is activity that covers everything from city planning to regional management within a specific area of a certain size with continuous implementation in mind. [2)] In this study, area management mainly aims at city planning with an emphasis on conservation and improvement of disaster wreckage at the time of recovery from disaster, and an emphasis on regional management after recovering from disaster in pursuit of sustainable development of the area. To be specific, a municipality engaging in regional development, and private organizations cooperate to vitalize local industry, promote tourism and disaster prevention education, and hold various events.

(3) Regional development means the economic, social, and cultural development of a certain area. In particular, regional development includes the increase in the number of people who interact through geotourism, economic activity expanded through geotourism, the promotion of school education and lifelong education, the enhancement of meaning for every citizens' life, and the promotion of their health. [3)]

(4) Ecomuseum, translated from the French word ecomusée, is a concept conceived in France in the late 1960s. Georges-Henri Rivière, who is known as the father of ecomuseums, describes ecomusée as a museum that aims to contribute to the development of a regional society by exploring the life of people in that regional society along with the historical development of its natural and social environment, and by conserving, enhancing, and displaying the natural and cultural heritage of the society. [5)]

(5) The guidelines and criteria (dated April 2010) of the Global Geoparks Network are intended for geoparks in each country to participate in the Global Geoparks Network with the support of UNESCO. They include six criteria: 1) Size and setting, 2) Management and local involvement, 3) Economic development, 4) Education, 5) Protection and conservation, and 6) The Global network. [6)]

(6) The division of the periods is as follows: 1) The Recovery Plan Development Period (from 2000 to 2005) from the 2000 eruption of Usu Volcano to the dissolution of the Laketopia 21 Promotion Council, 2) The Urban Network Development Period (from 2006 to 2009) is from the establishment of the Ecomuseum Promotion Council to the dissolution of the council, and 3) The Area Management Period (from 2010 to present) is from the establishment of the Geopark Promotion Council to the present.

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