EXPERIENCE OF THE BĂILE-FELIX TOURIST SYSTEM (ROMANIA) FOR THE PROTECTION AND PROMOTION OF THE GREY SEAL AS A BRAND ON THE HEL PENINSULAR (POLAND)

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The Pârâul Peței Nature Reserve, localized in Bihor County (Romania), in the area of the Băile Felix rural tourist system, gained international interest and a regime of protected area due to the existence of an ecosystem with thermal waters, being also the habitat of certain rare fauna species (Scardinius racovitzai, Melanopsis parreyssi) and especially flora species amongst which the tertiary relict unique lotus flower Nymphaea lotus var. thermalis. Situated at the seashore of Hel Peninsula, Gulf of Gdansk, Baltic Sea, the Hel Marine Station (HMS), thanks to the project to restore grey seals to the Polish waters, has been one of the most interesting tourist attractions in the Baltic region. Using specific analysis methods and instruments, through monitoring over a period of several years and by creating a complex data base, the authors created conditions for a systemic analytical endeavour focused on the actual condition of the elements which allow to compare these tourist destinations and find similarities between natural attractivness of both places. At brand level, the lotus flower as well as the grey seal has been situated, ever since their appearance, at the basis of both resorts' development, being found in the local, national and international collective mentality and in the iconography of a number of institutions. Identification of the causes which led to the almost total extinction of rare species, redefinition of the degree of knowledge and awareness of their value in the local mentality, the actual place occupied by the reservations and their elements in the promotion and rebranding actions represent the approach directions which compose the basic structure of this scientific endeavor.

Keywords: Nature Reserve, Thermal water, grey seal, tourist system, Baltic region, Romania

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INTRODUCTION

Situated West to Șomleu Hill (344 m), between Western Plain and Hills, the *1 Mai-Băile Felix* rural spa tourist system has gradually developed mostly due to its thermal water resources, favorable, from geological point of view, to anthropic exploitation and valorization, especially through tourism. Thus, the geological component, through its structure, lithology, chemical composition, thermal features etc. was reflected in numerous specialty studies [1- 6] as playing a significant role in defining the economic profile of the two resorts [7; 8]. The area with thermal waters from the natural ascending springs mainly serves as supporting natural resource feature for other elements of tourist attraction, as well as through its multiplying role in the diversification of tourist resources.

Out of the flora and fauna elements to which the studied area serves as a natural habitat, the *Nymphaea lotus var. thermalis* (thermal water lily, or *Dreţe* in Romanian popular language) is of particular importance. It is a tertiary relict and a unique case in Europe, since it is a species of tropical plant that has somehow managed to thrive in temperate climate conditions [9 -14]. The water lily was declared a monument of nature in 1931 at the initiative of the botanist Alexandru Borza. At an altitude of 140 m, in an area of thermal water from several natural springs, one of which is the famous *Ochiul Ţiganului* (*Gypsy` Eye*, fig. 2), the *Pârâul Peţea* Nature Reserve was founded (fig. 1) in 1932 to protect this natural wonder.

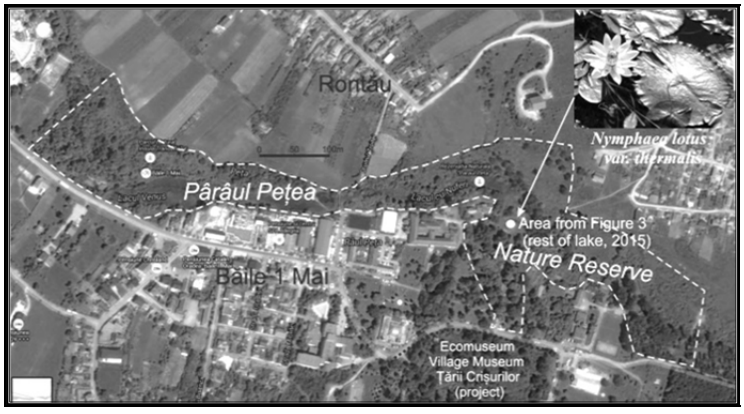

Fig. 1. Geographical position
of the Pârâul Peţea Nature Reserve in Romania

In 1995, 4 ha territory of nature reserve and a protected zone was delimitated through local regulations and included into the network of Nature 2000 sites (later extended to 48.9 ha) under the administra-

tion of *Ţării Crişurilor* Museum from Oradea (until 2015)[1]. The surface of a lake that is located on this territory reached about 600 m² (fig. 1), until December 2013, when it was demonstrated that the lake showed the first significant signs of depletion.

After 1990, the chaotic development of the tourist system and irrational exploitation of the basic tourist resource — thermal waters — through tourist and household activities have led to the decrease of thermal waters discharge and consequently to the depletion and destruction of the habitat for the three protected rare species: *Nymphaea lotus var. thermalis*, *Scardinius erythrophalmus racovitzai* – Racoviță's Rudd, endemic species of fresh water fish adapted to thermal waters and *Melanopsis parreyssi* — endemic species of snail relict [15—17]. It must be noted, however, that the number of almost extinct species which populate the reservation (according to The Red List of Threatened Species elaborated by International Union for Conservation of Nature (IUCN) and EU Nature 2000 Programme) is much bigger, which amplifies the importance of this natural site and its role in the development of tourism[2].

Fig. 2. Central part of Nature Reserve —
Ochiul Ţiganului (Gypsy` Eye) in 2010 and 2015

Apart from the problems caused by the reduction of water discharge (which researchers and mass media have been signalling since 2009), there are other anthropogenic environmental problems that occur in this area, such as natural silting in *1 Mai*, where some specialists noticed that the lake's depth had reduced to the minimum levels of about 0.30 m [5, 18]. Researchers are not the only ones who

[1] Bihor County Council Decision nº19/1995; Law nº5/2000, adopted by Romanian Parlament, Official Monitor, no.152/12 April, 20004; European Commission-Environment. Nature 2000 centrepiece of EU Nature at biodiversity policy. (http://natura2000.mmediu.ro/upl//formulare/ROSCI0098%20-%20F.pdf) (accessed 20.11.2018).

[2] Red List of Threatened Species elaborated by International Union for Conservation of Nature (IUCN). 2015. URL: http://www.iucnredlist.org/details/full/19948/0 (accessed 20.11.2018).

talk of the dangerous effects and causes of the disappearance of this tourist icon [10, 19—22]. In his poem, *Pusztul a Lótusz*, the poet Ady Endre (b.1906) mentions an imminent period of human-caused degradation of the lake and thermal lotus (through, for example, industrial processing of flowers for liqueurs and perfumes) [23].

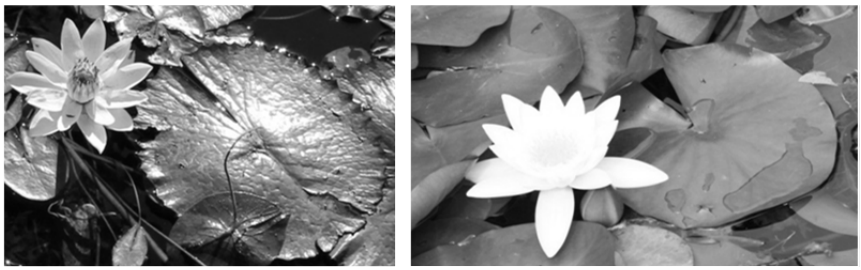

Fig. 3. Differences (leaf) between Nymphaea lotus
var. thermalis (left) from Petea Lake and Nymphaea alba (right)
from Băile Felix (colonized in artificial lake)

The Peţea lake and runlet from *1 Mai* is the only habitat of *Nymphaea lotus var. thermalis* (fig. 3). Yet the species is sometimes confused with the colony of a more common version of lotus, *Nymphaea alba* (fig. 3), which is located in the anthropic lake in the *Băile Felix* central park. This species is different from the protected one, but since there is a lack of sufficient public awareness campaigns, the protected species is often wrongly placed in Băile Felix.

The Hel Marine Station (HMS) was established in 1992 and is a field station in the organizational structure of the Institute of Oceanography in the Faculty of Oceanography and Geography at the University of Gdańsk. The location of the station is almost at the edge of the Hel Peninsula, in the middle part of the Gulf of Gdansk, which allows one to conduct research both in the coastal zone and on the open sea (fig. 4).

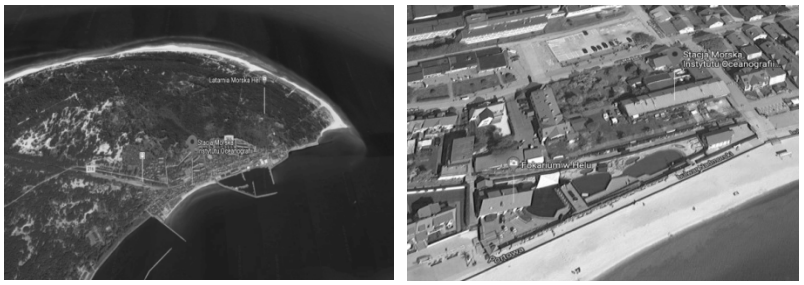

Fig. 4. Hel Marine Station at the edge of the Hel Peninsula (left)
and "Fokarium" with aquariums (right)

The tasks of the station include studies of biological, chemical, physical and geological processes in the coastal zone and the depth of the sea. The station was created to meet research needs that arose as a result of anthropogenic processes related to population growth, changes in the development of the peninsula and the development of tourist infrastructure with constantly increasing tourist numbers. The influx of holidaymakers who come to the peninsula to sail, windsurf, dive or simply enjoy their vacation time contributes significantly to the degradation of the natural environment of the seashore and water Gulf of Gdansk and Puck Bay regions [24].

Fig. 5. *Fokarium* with grey seals (left) and breeding tanks (right) [3]

The station has aquariums and breeding tanks with the flow of sea water that mimic natural conditions, which allows for the study of Baltic fauna and flora (fig. 5). Apart from research, the tank system enabled the implementation of a long-term project to reintroduce grey seals to the Polish coast of the Baltic Sea. The seal sanctuary operating at the *Fokarium* station with the seals caught in the Baltic Sea or bred at the station (*Halichoerus Grypus*) is considered the greatest natural attraction of Hel. Every year, nearly half a million people visit this center of research, breeding and rehabilitation of grey seals.

OBJECTIVES

The lotus in thermal waters of *Băile Felix* and the grey seal have both become the icons of their respective locations. At Hel, shops offer a whole range of souvenirs referring to the popular fishing grounds and seal stations. However, the seals of Hel are not loved by everybody. Local fishermen have long been accusing seals of destroying their nets and feeding on fish. Unlike *Băile Felix*, where tourists

[3] HEL MARINE STATION. URL: http://www.hel.ug.edu.pl/info/helmarinestation.htm (access date: 20.11.2018); Wikimedia commons. URL: https://commons.wikimedia.org/w/index.php?curid=44341505 (access date: 20.11.2018).

and residents share the positive image of the local icon, some Hel inhabitants consider grey seals to be mere pests. And no amount of scientific research that establishes a direct link between the lack of fish and overfishing can change this negative image.

The main purpose of this study is to examine the actual state of the *Pârâul Peţea* nature reserve and its elements, on the one hand, and the grey seal population at the Marine Hel Station as a tourism resource and brand, on the other, and to compare the degree of awareness and the role they play in the life of their local communities. This implies the need to evaluate the role of athropogenic factors in creating the real picture of the existing conditions specific to the reserve and the need to reintroduce the grey seal to the southern coast of the Baltic sea. This goal can be achieved by identifying, analyzing and correlating certain elements of the geographical, biological, demographic and tourist type, especially those of cultural, social and economic nature.

Structurally, there are four research objectives that emerge from the socio-economic aspect of the study: evaluating the level of familiarity with the reservations in the local communities (residents of the city of Oradea and the municipality of Sânmartin); identifying the causes of the reserves' degradation; suggesting ways to revitalize them; and identifying tourism development strategies for the protected areas.

METHODOLOGY

The methodological component of this study is based on an interdisciplinary approach, using geographic [25—31], statistical and sociological methods and instruments [32—37]. By applying and interpreting certain questionnaires constructed upon the abovementioned objectives, the research targeted quantitative and qualitative aspects.

The qualitative component was accomplished by means of a focus group, a method which is highly used in socio-geographic and interdisciplinary research [38—41]. The focus group was made up of specialists from various domains tangent to the theme (geographer, geologist, biologist, hydrologist, historian, sociologist, economist) with the purpose of analyzing important aspects concerning the studied issue in detail and receiving expert opinions on the results obtained from questionnaire [10].

Apart from the statistical and special analyses generated by data collection from the field and the creation of a data base, the quantitative component targeted the complementary sociological aspect and involved a questionnaire focused on the degree of awareness of causes of degradation, plans for revitalization and promotion of the reser-

vation, to which the reference socio-demographic data was added. The degree of awarenesss was determined by a set of questions focused on the identification of landmarks defining the resorts and the availability of information sources. The causes of degradation of the reservation referred to the awareness of its actual state and causes which had contributed to it (including tourism specific activities). Revitalization of the reserve focuses on the identification of solutions and institutions involved in rectifying the existing situation. The promotion dimension emphasised the degree and ways in which the reservations could develop as internationally-attractive tourism destinations. All of these aspects were studied on the basis of socio-demographic data obtained through interviews and adjusted for the education level, occupation, gender, age, address and living conditions of the respondents. The interpretation of results generated by the field activity and by the questionnaires was completed with the special analysis graphically and cartographically transposed by means of the GIS specific to the administration of such data bases.

The method used was that of direct inquiry within which the data and information were gathered from the field by means of the semi-structured sociological questionnaire. The data analysis and results interpretation were accomplished with the help of the statistical analysis program for social sciences, SPSS, and structured according to the research specific objectives previously described.

The identification and definition of the target group, the homogenization of the significant sections [42;43] and the choice of the sampling method [33] (in this case of probabilistic type, stratified) helped reach a high level of sample representativeness with reference to the total population [44] and structured the logical course of the sociological investigation with interdisciplinary component. The variables used in the present research were as follows: gender, age, education level, occupation and marital status. As for the monthly income, 38.2 % of respondents declared that they had enough for a decent living but could not afford buying expensive things, while only 7 % were satisfied with their income, managing to have everything they needed without restraints. On the opposite side, 10.6 % of the subjects declare that their income could not even provide for their basic necessities.

In total, there were 337 respondents from Oradea and Sânmartin communes, with the following synthetic socio-demographic profile (table 1): average age of 38.2, medium to a higher level of education (45 %), not married (52.4 %), students or employed in different types of services as personnel with and without higher education, medium monthly income. 52.5 % of the respondents were female.

Table 1

Respondents` education, occupation and civil status

Socio-demographic characteristics		% of total
Level of education	8 grades	2.0
	10 grades, vocational schools	10.0
	11—12 grades with baccalaureate diploma	45.0
	technical school or college	11.0
	higher education	32.0
Occupation	individual household farmer	0.7
	worker	9.2
	worker in trade, tourism and other services	21.6
	technician, foreman, clerk	2.9
	higher education staff	11.1
	patron, entrepreneur, freelancer	7.2
	unemployed	2.6
	pensioner	16.7
	students/pupils	28.1
Civil status	not married	52.4
	married/cohabitation	37.8
	divorced	4.6
	widow(er)	4.6
	other	0.6

A similar methodology was used for Hel Marine Station (HMS). For the research on the perception and brand of the HMS, a literature query and a survey were conducted. 102 students of Gdańsk universities majoring in tourism and recration took part in the research. The choice of students of the first year of studies was determined by the need to learn about the perception of both inhabitants of the Pomeranian Voivodeship and people from other regions of Poland. 36 men and 66 women took part in the study of the awareness of the HMS and the *Fokarium* seal sanctuary brand. 26 students came from the Pomeranian Voivodeship and the rest from other regions of Poland. The survey included 41 female students from the region where the *Fokarium* is located and 21 students from other provinces of the country. All respondents were in the range of 18—21 years and had completed high school.

ANALYTICAL FRAMEWORK AND RESULTS

Defining the brand and the respective image for the spa tourist system is based on two components: the supporting element, the thermal waters, and the main element — unique species of the ther-

mal lotus. Both components predetermined the development of other elements of tourist attraction system through the history of this local community. One such element was the hot-water Rontău mill, operational at all seasons until the middle of the 20th century [45].

Brand, image and promotion in the Pârâul Peţea Nature Reserve

In the case of the *Pârâul Peţea* Nature Reserve, the regeneration of an almost extinct brand is not possible within the same category, but alternative solution must be explored, for example, transferring the brand into a different category or inventing a new category for the old brand [46]. The development of the image of *1 Mai-Băile Felix* spa tourist system can be described as spanning two time periods, each having its own specific features:

a.) The period before 1990 is defined by strict town planning rules at both resorts, by controlled and targeted development of the infrastructure and the promotion of the resorts' image by emphasizing local brand elements. Consider the following local hotel names inspired by natural features — *Lotus*, *Nufărul*, *Termal*, regional toponymy — *Crişana*, *Mureş*, *Someş*, *Poieniţa*, *Muncel*, or Latin mythology — *Ceres*, *Apollo-Felix*.

b.) The period after 1990 is marked by architectural chaos and multiplying institutional names against the backdrop of explosive development of the accomodation infrastructure (the creation of new boarding houses was especially prominent). Apart from the extremely diverse architecture with no local or regional relevance, numerous structures appeared to bear the strangest names for this locality: *Noblesse*, *Davidoff*, *Ama*, *Vidraru*, *Monaco*, *Perla* etc. All these were the consequence of globalization and anarchy of the 20th centrury construction. This situation serves as a clear case of disregard for the brands' perennial and established features [46]. At the same period of time, however, the *Nymphaea* Wellness Thermal complex project and *Băile Felix* began to emerge as national brands.

During the post-socialist period, the iconography used in the promotion of the brands reflected their relationship to the locality and the territory [47]. This is seen from several prominent examples.

One is the tourist activity related to the *Pârâul Peţea* Nature Reserve, with many fliers and websites promoting it as a "unique gem" and a tourist attraction point, although the actual point of attraction, the lotus flower, is virtually extinct in most parts of the reservation (fig. 2). This is an attempt to regenerate an almost extinct brand where little to no chance exists for the brand to gain previous positions in the same category.

Another is an interesting attempt to transfer an almost extinct brand into a different category or to create a new category by including the *Pârâul Peţea* Nature Reserve and a future Village Museum from Crişuri Land into an eco-museum (fig. 2), much like Şomleu Hill being associated with the paleontological reserve and the natural monument The Betfia Aven.

A series of scientific papers emphasize the role of the reserve as the central point of the spa tourist system [10, 48].

Finally, the lotus flower itself is used as logo for many institutions, such as the University of Oradea (since 1964) or the Sânmartin Communal Sports Club, and in unique post stamps of the Romanian Post (fig. 6), dedicated to the three rare elements of fauna and flora from the *Pârâul Peţea* Nature Reserve.

Fig. 6. Romanian Post emission of unique post stamps with *Scardinius racovitzai*, *Melanopsis parreyssi* and *Nymphaea lotus var. thermalis* (8 December, 2008)

The vicinity of the city of Oradea as the main gathering point for tourists, as well as the presence of thermal waters on the city's territory, is reflected in local names "inherited" from the socialist period: the *Nufărul* neighborhood, the *Nymphaea* research journal published by the Ţării Crişurilor Museum, or, more recently, the *Floare de Lotus* national song and dance contest, the *Lotus* mall, etc.

The opportunies for the brand development represented by the lotus flower and the thermal waters "will have to take into consideration the fundamental rules regarding the insurance of the brands' immortality, the threats and opportunities to come, such as: social, economic, political trends, environmental issues and globalization" [46, p. 42].

Brand, image and promotion of the Hel Peninsula, city, HMS and the *Fokarium*

In the case of the Hel tourist resort, the tourist system and its development can be divided into two periods, before and after 2003. Already in 1920, one summer after Poland regained its independence, work was undertaken to build a strong defense base for the Coast on

the Hel Peninsula. In the 1920s, a railway line was built connecting Puck on the Gulf of Gdańsk leading across the Hel Peninsula, and in 1928, the construction of a naval port began in the city of Hel. At the same time, one tenth of the final section of the spit, from Jurata to the end of the cape, was heavily militarized. The development of tourism in this region was prohibited by military ban on civil construction. No such structures could be built without the consent of the military authorities. Limits on tourist traffic were also imposed. The military presence on the Peninsula was regulated by a decree of the President of the Republic of Poland, Ignacy Mościcki, dated August 21, 1936 regarding the creation of the Fortified Hel Area. Almost sixty years after the end of World War II, on November 25, 2003, the Constitutional Tribunal ruled on the motion of the President of the Republic of Art. 15 section 2 of the Act of 24 July 2002 on recognizing part of the Hel Peninsula as an area of particular importance for the defense of the country. This verdict ended the existence of the fortified Hel area and opened the city for tourists.

a) *The period before 2003 (1945 – 2003)* was characterized by limited access to Hel, the necessity to agree on the development of the infrastructure with the military and limited tourist traffic. From an ecological point of view, apart from the devastation of the natural environment related to the stay of the army and the expansion of military infrastructure, a small number of tourists favored the development of fauna and flora on the peninsula.

b) *The period after 2003* saw economic transformation, which was especially vivid after the military ended their presence on the Hel Peninsula: the number of tourists soared, and the degradation of natural areas became more and more pronounced.

Similar to the *Pârâul Peţea* Nature Reserve, imagery of the Hel played an important role in brand promotion and established a connection to the local peculiarities. Several examples of this are listed below.

First, the increase in recognition of the HMS was associated with the promotion of the eco-friendly approach to the use of natural resources of the Baltic Sea, and especially the natural values of the *Nadmorski* landscape park, which covers the Hel Peninsula, the Puck Bay and a part of the aquatorium of the Gulf of Gdansk [48—50].

Second, several scientific papers highlight the role of the reserve as the central point of the Hel Penisula tourist system [51—53].

However, compared to the lotus logo from *Băile Felix*, the seal is not an open and widely-used tourist brand, as it is often absent from many local logos. It can be found on the website of Hel Marine Station, in the name of one of the newly built apartment buildings in

Hel, and an image of the seal can be seen in store windows. Still, the Polish Post, too, issued a series of stamps featuring three Baltic seals (grey, common and ringed, Fig. 7). New stamps were introduced at an event held at the Marine Station of the Institute of Oceanography at the University of Gdańsk in Hel.

Fig. 7. Polish Post emission of unique post stamps with seals: *Halichoerus grypus*, *Phoca vitulina* and *Pusa hispida* (31 July, 2009)

DATA BASE INTERPETATION AND RESULTS FOR THE PÂRÂUL PEȚEA NATURE RESERVE

The interpretation of the results according to the previously described specific objectives facilitate the understanding of the present-day situation and help account for the territorial realities. This, in its turn, may represent a starting point in elaborating certain strategies for the development and promotion of the spa tourist system by considering contemporary trends, brands and local resources. Moreover, the local respondents' responses show the degree of knowledge referring to their own resources, those of the environment they live in, and the real/false image of the basic foundations important for the local development strategies. The (in)sufficiency of knowledge about the present-day local realities is fully reflected in the results of this study. Thus, for example, a number of respondents associate the thermal lotus with *Băile Felix* and not with *1 Mai*.

Information sources for the reserve

Using only the information from the respondents who had heard about the existence of the reserve, we tried to identify their main information sources; these are shown in Figure 8 and include schools (47,3 %), media — including newspapers (37,5 %), followed by friends (27,3 %), family (23,4 %) and the Internet (18,2 %). Only some responders said they had received information about the reserve at their work place.

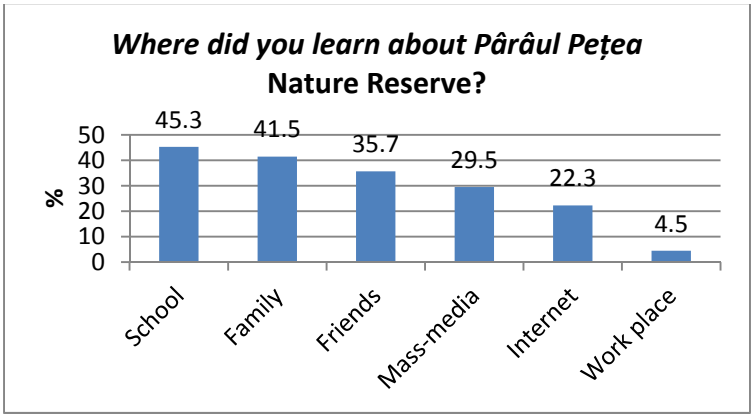

Fig. 8. Information sources about the *Pârâul Peţea* Nature Reserve

Generally, the Băile Felix-1 Mai spa tourist system is nationally acknowledged and appreciated due to the existence of thermal waters with therapeutic benefits. The analysis of the questionnaire results confirms the importance of this factor: most subjects believe that the popularity of the brand and appreciation of the tourist system it represents are linked to the thermal waters (81.1 %) and to the related therapeutic procedures and treatments (62 %), determined by the valorization of thermal water. As for the reserve (30.4 %) and the protected species of animals and plants (29.1 %), local respondents consider them less important for brand recognition (fig. 9). Another interesting aspect is that very few people make the connection between the thermal water as basic/supporting resource and the plant and animal species protected in this habitat. Why no image or logo connects these three natural tourist resources is a topic for further analysis.

Among other reasons *Băile Felix* and *1 Mai* are appreciated the respondents mentioned the aqua park, good tourist services, local cuisine and beautiful landscapes.

A positive finding is that 67 % of the local population are well informed about the existence of the *Pârâul Peţea* Nature Reserve (however, 33 % of those who are not so well informed about the reserve is still a big slice of the local population). Even though the protected lotus flower is known, in most cases it is wrongly associated with *Băile Felix*. The education level correlates significantly with the responses, with the group of the less-informed respondents being also the group with lower levels of education (Pearson coefficient of correlation =7,323, $p<0.05$).

Selecting only the data collected from subjects who declared that they know about this reserve (67 %), we wanted to deepen the analysis regarding their degree of knowledge. It was found that most of respondents state that the reserve is well known at national and even international level primarily because of the existance of the species of *Nymphaea Lotus* (thermal water lily). Thermal waters, as well as pro-

tected flora and fauna species are often mentioned as other elements for which the reserve is appreciated. However, only a few respondents were aware that the area is recognized as a nature reserve. Also, most subjects (91 %) consider that the reserve is in an advanced state of degradation. This knowledge is generated not by the (visitation) of the local population to the protected area, but by the aggressive mass-media information campaign.

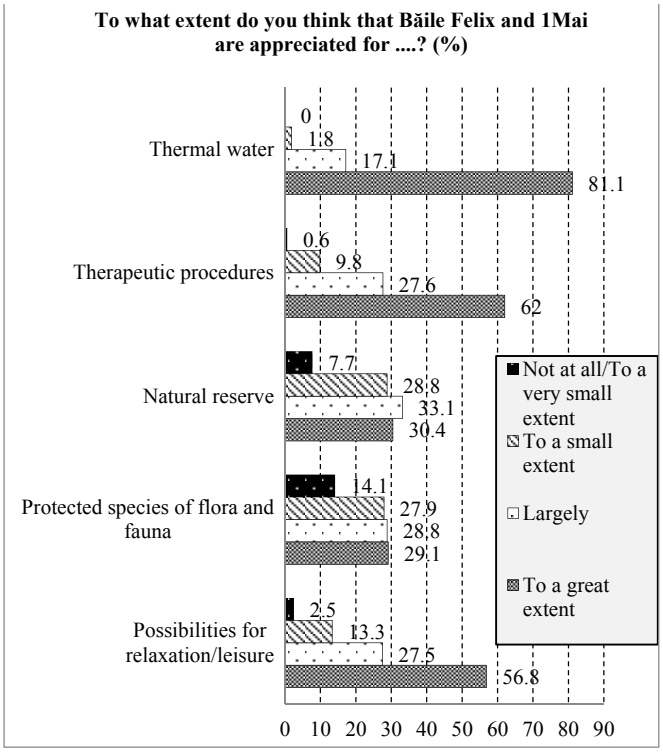

Fig. 9. The degree of awareness about the nature reserve among local population

Reserve degradation

This section is dedicated to the analysis of the responses of those aware of the existence of the reserve. It deals with the perceived state of degradation of the reserve, the analysis of the understanding of the causes of degradation and proposed promotion strategies.

Respondents were asked to range their opinion regarding the risk of extinction to which the reserve is exposed. In this sense, we used a measurement scale ranged between 1 and 10, where 1 represented no risk at all, and 10 — immediate risk of extinction. The mean value was 7.6, which means that the local population is aware of the fact that the nature reserve is at a high risk of extinction.

On the same scale, the mean value of respondents` answers regarding the negative impact of tourism on the actual state of the reserve is 4.7 meaning that the local people do not see a negative connection between tourist activity in the area and the degradation of the nature reserve.

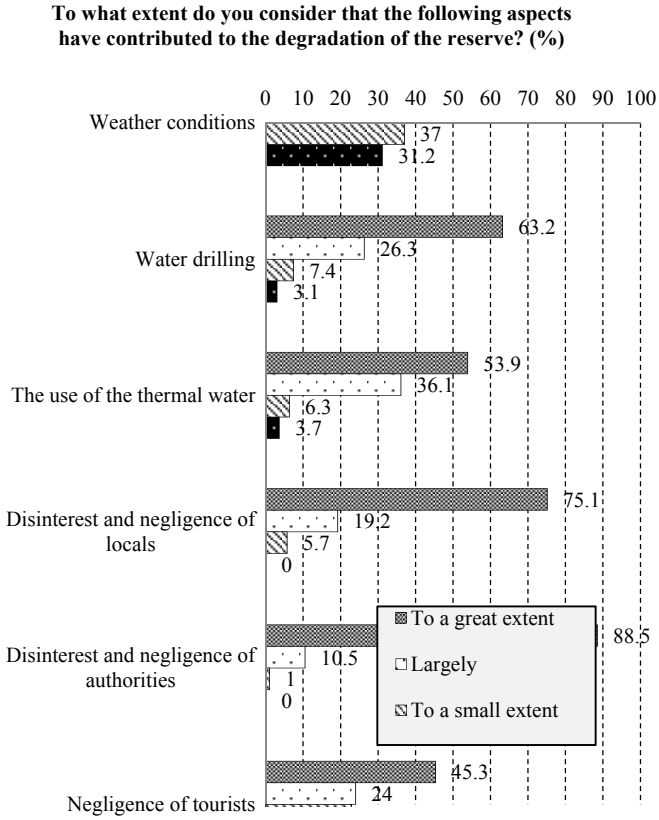

Fig. 10. Causes of degradation

It is important to mention the main perceived causes of the reserve degradation, listed in fig.10: disinterest and negligence of authorities (88.5 %), disinterest and negligence of local inhabitants (75 %), water drilling (63 %) and the inadequate way of using thermal water (54 %). Interestingly, fewer respondents (31 %) believe that climate does not have a negative impact on the actual state of the reserve, although relevant research points to the major influence that droughts and the lack of rainfall from last few years have had on the reserve condition.

Reserve revitalization

Amending the behaviour of people who do not respect the law that protects the reserve is considered to be the main way of reducing

the degree of its degradation and preserving its condition (73 % of all answers). Raising awareness for local inhabitants (66 %) and rationalizing thermal water consumption (60 %) are other aspects that could contribute to the improvement of the actual state of the reserve, according to the local population (fig. 11).

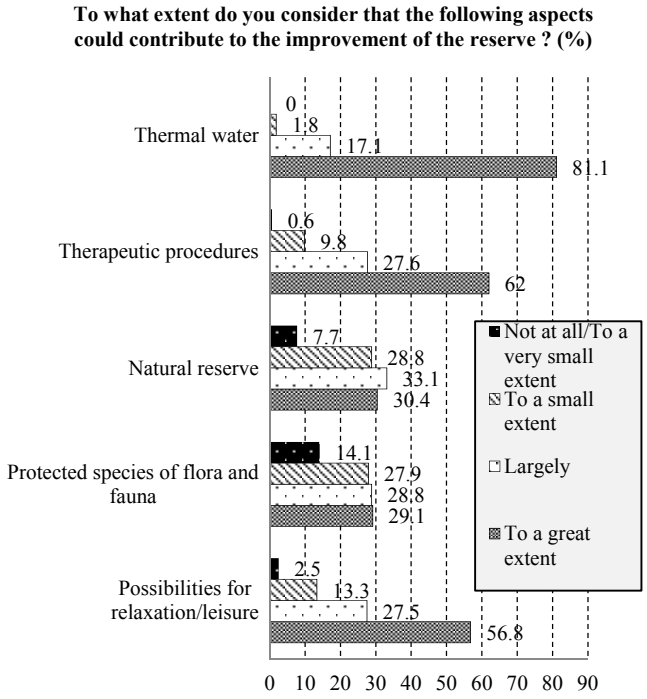

Fig. 11. Methods of revitalizing the reserve

The Ministry of Tourism is considered to be the authority which has the main responsibility for improving the actual condition of the reserve (according to 76 % of respondents), followed by the Environmental Protection Agency (66.5 % of all answers). The *Ţării Crişurilor* Museum from Oradea, Oradea city police department and Oradea city hall were not considered by the respondents to be of major importance in terms of revitalizing the reserve.

Promotion of the reserve as a tourist destination

On a same scale with values ranged between 1 to 10 (1 = Not at all and 10 = To a great extent), respondents were asked to evaluate how well the reserve is promoted as a tourist destination. In this case, the mean value was 4.02 highlighting the fact that the local population does not believe current promotion campaings are sufficient for the reserve.

Most respondents (79 %) consider that a strategy of promoting the tourism development of the entire Bihor County along with massive

online advertising campaigns (75.5 %) could contribute to better promotion of the nature reserve. Yet the classical form of street advertising is preferred by almost 60 % of the respondents (fig. 12).

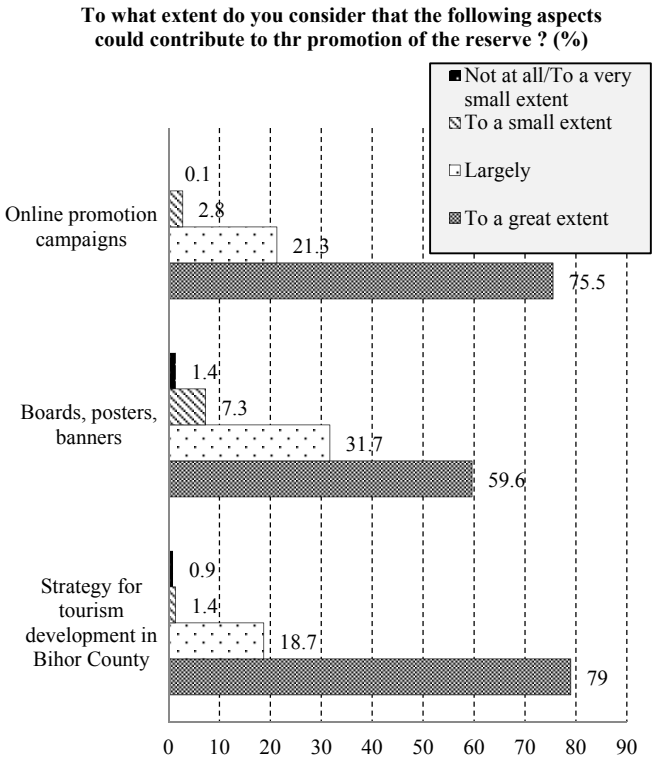

Fig. 12. Promotion strategies for the reserve

DATA BASE INTERPETATION AND RESULTS FOR THE HEL PENISULA, CITY OF HEL, HEL MARINE STATION AND THE *FOKARIUM*

The interpretation of the results according to the previously described specific objectives facilitate the understanding of the present-day situation and help account for the territorial realities. This, in its turn, may represent a starting point in elaborating certain strategies for the development and promotion of Hel Peninsula tourism system by considering contemporary trends, brands and local resources.

Information sources for the Hel Peninsula, city of Hel, HMS and the Fokarium

Using only the information from the respondents who had heard about the existence of the reserve, we tried to identify their main information sources. Note that since each of the respondents could choose several answers, taken together the numbers will not add up to 100 %.

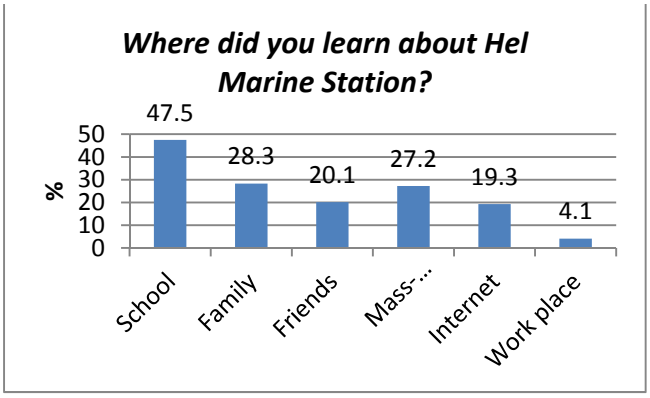

Fig. 13. Information sources about Hel Marine Station

The respondents who knew about the area, primarily listed schools (47,5 %), family trips (28,3 %), media, including newspapers (27,2 %) as their information sources about the HMS, followed by friends (20,1 %) and the Internet (19,3 %). Only a few of those surveyed reported that they had been informed of the HMS at their workplace.

Typically, the Hel Peninsula and rest of this tourist system are nationally acknowledged and appreciated for the existence of the Hel Marine Station with the *Fokarium*, and other natural and man-made attractions (table 2).

Table 2

Ranking of tourist attractions of Hel (> 30%)

Place in the ranking (2018)	Answers granted	Percent of indications	
		2008	2018
1	Fokarium	71	71
2	Beautiful beaches	63	69
3	Lanscape	58	61
4	Lighthouse	47	49
5	The atmosphere of a fishing village	40	45
6	Peace and quiet off-season	35	31

Source: Majdak P., 2008, Tourist amenities of Hel and conceptions of their development in accordance to the preference and expectations of visitors, Turystyka i Rekreacja, 4, 137—143; our research.

Surveys carried out in 2008 and 2018 show an increase in the appreciation of the "beautiful beaches", however the most recognizable tourist asset of the Hel peninsula, the *Fokarium* seal sanctuary did not

gain in appreciation over a period covered by these studies. A lot of respondents mention landscape features and anthropogenic features such as lighthouse or the special atmosphere of a fishing village. Interestingly, "peace and quiet off-season" was the least popular answer among those that had more than 30 % of is "Peace and quiet off-season", which indicates the possibility of developing traditionally seasoned tourism on the Baltic Sea for the period outside May-September, at the tourist summit in June-August.

Hel Peninsula, Hel city, HMS and the *Fokarium* degradation

The number of tourists visiting the Hel Peninsula has grown rapidly over the last decades. In order to obtain information on tourist traffic on the beaches of the Hel Peninsula, a monitoring study was carried out. Data on the number and spatial distribution of tourists was collected. The study focused on tourists staying on the beach between the shoreline and the dunes. The counting took place on 10 m sections, which were separated by intervals of the same length. This scheme was repeated ten times over 200 meters by each of the six groups of researchers. Each had to perform this test three times. The results of the study are presented in Table 3. Conducted in unfavorable weather conditions, at 12:30, the study was interrupted by a rapid rain. Some groups started measurements earlier than the others, therefore the results obtained on individual sections vary significantly [49].

Table 3

Number of tourists per 10 m on the northern beach of the Hel Peninsula

Tested section	Number of tourists	Average number of tourists / 10m
Władysławo — Chałupy	90	9,0
Chałupy — Kuźnica	87	7,0
Kuźnica — Jastarnia	56	2,8
Jastarnia — Jurata	108	3,6
Jurata — Hel Bór	9	0,5
Hel	121	12,1

Source: [49]

Already in surveys carried out in 2012 under similarly unfavorable weather conditions, the number of tourists on Hel was shown to be close to exceeding tourist capacity, and in our studies it is close to the tourist absorption capacity of the Hel peninsula (see Table 3). The

largest tourist loads (by their numbers) have been recorded at the sections of beaches between Władysławo and Chałupy, Chałupy and Kuźnica and on Hel, over 5 people for 10 m of the beach at each site. The period from 2013 to 2018 was characterized by very good weather, comparable in some weeks to temperatures in the resorts of Egypt and Tunisia [54]. What caused an even greater influx of tourists was political destabilization and terrorist attacks in the region of the Mediterranean Sea, in North Africa (Egypt, Tunisia) and the Middle East (Israel, Turkey), traditional destinations of Polish holiday-makers, who had now decided to spend their vacations on the Baltic sea [55—59]. National tourist crisis is worsened by the ever-increasing tourist traffic of foreigners. There is a clear impact of shopping tourism from the Kaliningrad Oblast [60], and Russian tourists often choose the region of Pomerania as their summer retreat destination. After the completion of several modern marinas, the number of yachts in the Gulf of Gdańsk increased considerably and the number of cruisers arriving to the ports of Gdańsk and Gdynia also increased [61].

Hel Peninsula, Hel city, HMS and the *Fokarium* revitalization, brand and promotion

The conducted research allowed to determine the main directions of protection of tourist locations on the Hel Peninsula (Fig. 14). As the respondents indicated, the tourist assets requiring immediate protection include the Baltic seals ("large" need of revitalization and "to a great extent" answers amounted to 94 %), the natural reserve (92 %), protected species of fauna and flora (87 %) and lanscape (79 %) — just like the possibilietes for relaxation and leisure (fig. 14).

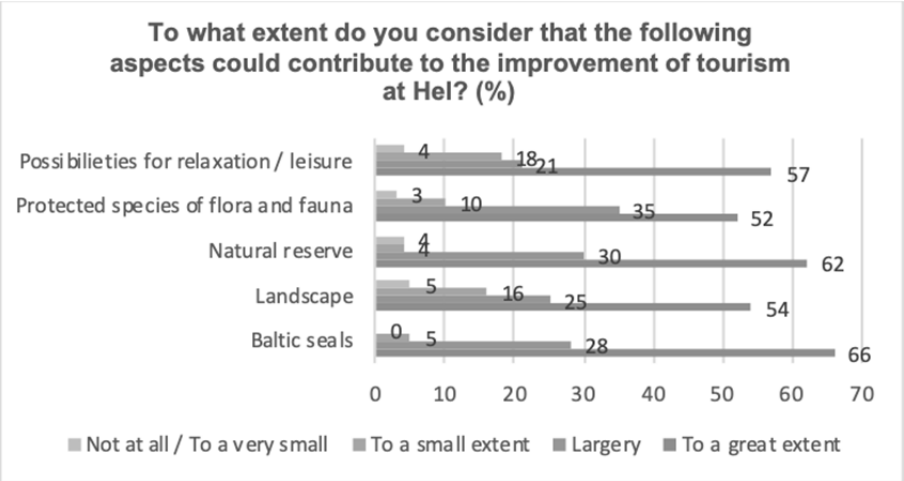

Fig. 14. Revitalization of the Hel Penisula

The students surveyed demonstrated a high level of appreciation for the protection of the natural environment and its tourist values. The inhabitants of the Hel Peninsula, as evidenced by numerous press reports and events from the summer of 2018, in which about ten killed seals were found on the Gulf of Gdańsk Coast and the Puck Bay, may have a very different assessment of natural values in the studied region[4]. While these cases may be dismissed as isolated cases and not indicative of the full extent of environmental awareness of the inhabitants of the Baltic sea communities, the conflict of interests between local fishermen and environmentalists is clearly visible in the Baltic regions.

The brand of the Hel Peninsula as a tourist destination is widely recognized throughout Poland. Therefore, the conducted survey focused on the recognition of Hel Marine Station and the *Fokarium*, which are the most recognizable tourist attractions of the peninsula.

Table 4

Recognition of the HMS and the *Fokarium* brand by students

Group of students	Number Yes (%)	No (%)
Students from Pomerania (M)	76,9	23,1
Students from Pomerania (F)	78,0	22,0
Students from Pomerania (all)	77,6	23,4
Students from another Polish regions (M)	50,0	50,0
Students from another Polish regions (F)	60,0	40,0
Students from another Polish regions (all)	57,1	42,9
All students	70,6	29,4

[4] Why do seals die on the Baltic Sea? Four seals found ashore. Expert: This is a dangerous period // Gazeta Wyborcza, 2018. URL: http: // wia do-mosci.gazeta.pl/wiadomosci/7,114883,23489269 czcz-nad-baltykiem-gina-seal-sea-wyrzucilo-juz-cztery-ekspertka.html (access date: 03.06. 2018); The fifth dead seal found on the Baltic. PLN 50,000 reward for finding perpetrators. 2018. URL: http: //www.polsat news.pl/ wiado-mosc/2018-06-06/piata-martwa-foka-znaleziona-nad-baltykiem-alrea dy-50-tysiecy-zl-award-for-indication- sprawcow / (access date: 06.06. 2018); Baran W. Dead seals at the Baltic Sea. The prosecutor's office looks into the issue. 2018. URL: https://wiadomosci.wp.pl/martwe-foki-nad-baltykiemprokuratura-laczy-wszystkie-sprawy-62619371912126 73a (access date: 12.06. 2018); Kisicka A. Another dead seals at the Baltic Sea. 2018. URL: https://fakty.interia.pl/polska/news-kolejne-martwe-foki-nad-baltykiem,nId,2594687 (access date: 15.06.2018).

The results of the research confirmed the greater recognition of the Hel Marine Station and the *Fokarium* brand by students from Pomerania. As many as 77.6 % of them have visited or heard about HMS and the seal sanctuary, with very little difference in responses between men and women. The brand recognition is different for students from outside the region, although it is still quite high. Here, 57.1 % knew of the attractions mentioned in the study, which is 20 % less than for the students who were originally from Pomerania. Gender diversity is also visible in these responses. Half of male students and 60 % of female students from outside the region knew about HMS, which can indicate more interest in environmental protection among women (Tab. 4).

The short season for toursim on the Hel peninsula is mainly associated with treacherous weather conditions, yet it is also regulated by the administrative decisions related to the summer period of students' holidays. It should be pointed out that it is possible to extend the tourist season, just as it has been done with winter holidays, which last two weeks in Poland. To extend the winter tourist season, winter holidays begin at different times in different regions of the country, moving by a week in specific regions, which increases their total length from two weeks to five weeks, and at the same time reduces anthropogenic pressure on winter mountain resorts. A similar solution for summer holidays would lead to the extension of the summer season and reduce the burden on the environment of the Peninsula, as a relatively similar number of tourists would be spread over a longer period of time. Summer holidays could start, for example, at the end of May and last until mid-September. Just like winter holiday season, it would last longer, but moving their start would diminish the number of tourists on the Baltic coast at any given time.

CONCLUSIONS

Nationally and internationally renowned, the *Pârâul Peţea* Nature Reserve benefits from a relatively high degree of acknowledgement amongst the local population, especially those with above average education level. Most respondents (67 %) claim that the fame of the reserve is linked to the existence of the thermal water lily, *Nymphaea lotus var. thermalis*. However, in the promotional campaigns the protected species is frequently wrongly placed in *Băile Felix* and it is confused with the common water lily, artificially introduced to the resort. The thermal waters, prolific natural environment for the development of rare fauna species — *Melanopsis parreysii* and *Scardinius erythrophtalmus racovitzai* (Racoviţă's Rudd), are also renowned as being iconic and contributing to the attractiveness of the reserve and of the *Băile Felix-1 Mai* rural tourist system.

Currently, the reserve is in an advanced state of degradation, facing a very high risk of extinction, which is acknowledged by many people living in the vicinity. Our research demonstrates that the tourist activity which generally is localized at resorts is not seen as having a negative impact on the advanced degradation state of the reserve. On the other hand, the blame is placed at the authorities' and local population's negligence and lack of interest. Drilling for thermal waters and the irrational use of thermal waters in the area contribute to the negative dynamics of the nature reserve.

The civic commitment is considered to be the basis for the development of the sense of protection for the natural resources in the area studied, and it is the society, through competent authorities — especially at the national level — that is responsible for identifying and imposing fines on those who do not respect the protected status of this land, and for promoting environmental awareness among the local population. Rationalization of the way in which the thermal water from the area is used could significantly slow down to the nature reserve degradation.

Tourism in the area could and should also benefit from the natural tourist attractions, among which is the *Pârâul Peţea* Nature Reserve. The lack of proper promotion, especially during its peak period and the negative effects of this deficiency are a familiar situation for the local population. The research results emphasize the urgent need to elaborate and implement an integrated tourist development strategy at Bihor County level which should nationally, as well as internationally, promote the main natural tourist attraction sites.

In the case of the *Băile Felix – 1 Mai* the key brand elements for the tourist system are the thermal water and the thermal water lily. Both can be found within the *Pârâul Peţea* Nature Reserve, both are on the brink of extinction. This shows the paradoxical disconnect between the brand iconography and real-life situation, in which the protected species of thermal water lily continues to be advertised and graphically promoted in tourist offers, infrastructure elements, etc., thus contributing to the creation of picture that is detached from reality.

As late as May 2015, the *Pârâul Peţea* Nature Reserve and especially *Nymphaea lotus var. thermalis* could be found on various advertising websites, which shows the lack of accurate information regarding the actual situation. This considereded, however, it is desired to keep these elements at the heart of the promotional brand.

It is interesting to note that in the era of digitization, the Internet lags behind school, family and friends as the main source of information in the surveyed sample, which also has implications for the development of adequate brand promotion strategy.

As our research outlines, the Hel Peninsula, with the Hel Marine Station, the *Fokarium* and numerous other man-made tourist attrac-

tions is not only nationally, but also internationally renowned and appreciated by visitors. Almost half of our subjects claim that they have learned their information about the Peninsula from schools.

Currently, the reserve is in an advanced stage of development, however it is facing a very high reputational risk, especially among local fishermen. On the other hand, a mass-media defence campaign of the most important values of the station — the grey seals — is underway. Tourism in the area could and should also benefit from the natural tourist attractions, among which are beautiful beaches, landscapes and the atmosphere of a fishing village.

Our research concerned two nationally and internationally acknowledged and appreciated European tourist attractions: The *Pârîul Peţea* Nature Reserve located in the area of *Băile Felix*, Romania, and Hel Marine Station Situated at the seashore of Hel Peninsula, Gulf of Gdansk, Poland. The results generated from our analysis pointed at the fact that both places enjoy natural and made-man attractions which qualify them as inviting tourist destinations due to the presence of rare fauna and flora species and landscape features. Yet, our study results also outlined the need to properly protect, revitalize and promote these natural environments in order for them to develop and thrive.

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