



ACCESSIBILITY OF PROTECTED AREAS FOR PEOPLE WITH DISABILITIES - THE CASE OF THE NATIONAL MARINE PARK OF ALONNISOS-NORTHERN SPORADES, GREECE

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Abstract:

In the present paper is studied an approach to accessibility for people with disabilities in Protected Areas, focusing on the area of information offered to visitors in the area of the National Marine Park of Alonissos-Northern Sporades (N.M.P.A.N.S.). At first accessible information material to the Information Center of the N.M.P.A.N.S. Management Body is examined. The findings and recommendations raised during the research process gave rise to the construction of information materials concerning the N.M.P.A.N.S. and react to the needs of people with visual impairments. Then, an evaluation of the material of the individuals surveyed and approved its suitability. The most informative material exhibits the Information Center of the Management Body, being an important means of visually impaired visitors. This action is a first step toward the realization of the difficult goal of accessibility for people with disabilities in N.M.P.A.N.S.

Keywords: accessibility, protected areas, disabilities, Marine Park of Alonissos

1. Introduction

In May 1992, the sea Alonissos, Sporades region characterized by Presidential Decree as a National Marine Park and 11 years later, in June 2003 through a joint ministerial decision established the Management Body. One of the principal responsibilities of the

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agency is information, education, and training on issues related to the functions and purposes and the protection of the Protected Area in general. This can be taken into account in the Information Center set up in N.M.P.A.N.S.

At the Information Center, you can receive any information wishes to N.M.P.A.N.S. In rich, informative material has included information panels with photographs, attended by explanatory notes. Even the visitor can be informed through managerial guides and information brochures and through rich audio-visual material such projections PowerPoint and video. The professional staff of the Management Body and volunteers involved in the renovation sector, with said tool material, increases public awareness concerned.

The protection of the natural and cultural environment, in accordance with existing legislation, is real and obliges both of every citizen (Skourtos Sofoules, 2005). The opportunity to move to better protect areas, monitoring, and participation in conservation actions and the management planning should include all social groups (Paraskevopoulos, Minotou, Pantis, Mniestris, 2007), including people with disabilities.

It, therefore, appears the necessity and responsibility of ensuring access of people with disabilities in all actions conducted in the areas of high ecological interest. One of these is to inform the public and to raise awareness, action important for the acquisition of knowledge and the cultivation of values and skills that help the person to understand and appreciate the relationship between man, culture, and bio-physical environment (Paraskevopoulos, 2009). Approach for being given access to information is being appropriately modulated information addressed to all visitors of Protected Areas.

In this research the information material was examined through the prism of accessibility, particularly for the visually impaired. The information boards are positioned at the proper height in the correct size and type font. Their lighting also is adequate, avoiding the creation of reflections which would hinder their reading. The audio-visual material already provides essential audio information.

Despite all this, a person with serious visual impairment was not properly arranged informative material which will provide information on the Marine Park. Tactile maps, models, sound libraries missing from the Information Center, making enrichment necessary material.

2. Methodology

The absence of suitably adapted information materials for people with vision problems and the desire to increase information and proposals on this research led to the realization.

The research conducted was only an applied research, as the purpose was prearranged and practical. The design and execution of research were to be on the direct use and application of the results in a default state practice (Paraskevopoulos, 1993). Its purpose was the consequences are utilized to create informational material, suitable for visually impaired people to be placed in the N.M.P.A.N.S. Management Agency Information Center. The research's goals are: a) to obtain information about previous visits of people in Protected Areas, b) to learn their opinion on the importance of access to information and activities related to nature and c) be proposed by interviewees through realization access to information and activities.

More specifically, the research question asked, concerned the ways where is no way to ensure access for people with visual impairments in a Protected Area. Those procedures will be inspired and drawn from people who meant the material, i.e. people with vision problems. The case study was the proposed materials and activities of the participants, like tactile maps, artwork, and audio library.

The benefits of the research were varied and multifaceted. Creating information, materials, and ensuring the access of people with disabilities in it, brings many positive social, individual, and environment, inherited helping the achievement of the renovation objectives like awareness of environmental issues, an understanding of the value of ecosystems and the problems they face, the acquisition of knowledge related to management actions and the growing desire to participate in them. For people with vision problems are more benefits as they are available for use of the material, the ability to activate the senses. Through an experiential way of information and learning through interaction and cooperation required to develop the employee carrying out the update, as well as with the other guests, grown concepts like collaborative and collective. The development of self-confidence and self-image is a few more of the benefits that are born.

The importance of implementation of such actions should take to improve the local economy through a type of alternative tourism, environmentally friendly. The provision of a right like access to people with disabilities leads to increasingly greater participation and visit these people in areas appropriately designed, not answering the needs and desires (Buhalis, 2012). The embodiment, therefore, such research is crucial to create an image of the desired modes of access and participation of people with disabilities, so this alternative formula to properly designed tourism brings many benefits.

2.1 Participants

The sample for this research was chosen by the Association of People with Vision Disabilities of Magnesia, "Blind Magnets." The people surveyed felt that was the best damn thing possible sample for pumping to give information concerning the relevant subject. We wanted to make a representative sample of potential visitors to the Information Center of the Management Body, namely people with different characteristics, like age, gender, and visual acuity. Were selected five individuals, a female, and four males, of which three were blinded while both were impaired vision. The age range ranged from 20-65 years.

2.2 Method

The data we wanted to gather in this investigation led to the selection of qualitative research method, as well as qualitative methods focuses on the phenomenon and not the quantity of appearance (Paraskevopoulos-Kollias, 2008).

Tool collection of our data was the semi-structured interview. The choice of this tool was given to us the opportunity to make questions we thought would help in raising imperative for the realization of information and ideas in a context free. The discussion could be directed where to look without deviating course and without having to follow a strictly prescribed order.

2.3 The interviews

The interviews were carried out on a questionnaire drafted. The interviews base were a) views of the interviewees on the access of people to a high ecological significance and information for this b) previous visit of interviewees in a Protected Area and potential together with activities and information material suitable for people sighted, c) their own ideas for the creation and appropriate information d) their own ideas for the design and implementation of activities in nature.

The questions were stimulated by the above axes. More specifically, after an introductory question put on the data derive from nature in their one visit to this. Interviewees were made for information about a possible visit them to an area with special ecological interest as a national park or a national park. If the answer was yes, then followed questions about the Media Center and about of informational materials and activities in this region. Then, there was a question concerning the importance they give to the existing information and asked them about the better in their view media as tools for their information. The activities were being critical, and suggestions about these were the object of subsequent questions that followed.

It is important to note at the time of interview complied with the ethical principles. Ensured the protection of participants' data, reported from the beginning, the purpose of research and attention has been paid to setting up and formulating questions that would not embarrass the respondents, while certainties or ambiguities (Paraskevopoulos, 1993).

3. Results

The classification, categorization, and classification of meaning units, procedures are of particular importance for the data analysis of qualitative research (Cohen, Manion, Morrison, 2007). In this investigation, the above procedures were measured against the four pillars of the interview set and knew exactly what to look for data, used a holistic approach to data analysis (Dey, 1993).

About the part of a possible visit to a Protected Area and the contact with activities and information material suitable for visually impaired people, only two of the three participants gave a positive response to the session with any of them but participants gave a positive answer as to the availability of suitable material. All interviewees considered necessary as information and thus information material, and their direct contact with nature, through suitably modulated activities.

Their own ideas to the creation and appropriate information varied. All five saw the importance of having tactile material. In particular, existence layouts proposed all five participants while the same is applied to tactile map. Dildos animals and compartments formed a sentence of three of the five participants. Three of the participants considered qualified staff necessary that guides them while two felt it necessary to have auditory material. The ideas contain in the design and implementation of activities in nature, comprised mainly Eco-routes (four out of five participants). Still, one of the participants proposed the creation of treasure hunting.

From the above it appears the necessity of adapted material and activities for people with vision problems. Information and motivation are crucial elements to consider the appropriate means that suffer. Tactile materials like models, maps, and models can be diagnostic information tools while activities like Eco-routes should occur in a Protected Area.

3.1 Creating the information material

Through the results of the investigation preceded, in cooperation with the Management Authority, the implementation of some proposals. The sector where we worked was updated, as they have the necessary knowledge to speak at this. We decided, therefore,

to construct the two recommended by interviewees' media tools, this map and layouts. The material will be presented in the Management Body Awareness Center as a major move to realize the challenging goal of accessibility for people with disabilities in N.M.P.A.N.S.

3.2 The construction of the tactile map

The tactile maps are representations of spatial plans carried by the tactile, visual, and haptic-visual approach (Panteliadou & Argyropoulos 2011). Given the importance of their existence in a Media Center a Protected Area to provide longitudinal information, the decision was taken to create a tactile map that depicts the N.M.P.A.N.S.

The map contains all significant islands and the major islets included in the Marine Park area. It includes Alonissos, Kyra Panagia, Peristera, Skantzoura, Two Brothers, Jura, Piperi, Psathoura and Lechousa and Grammeza.

The construction of the map was performed founded on criteria like the scale, the existence tags Braille, the texture of the materials, the distance of objects, the material and the amount of overhead data. The information necessary for this construction was taken from the pertinent literature for the best possible result.

With respect, therefore, the size of tactile maps, the most common size encountered is A4, and A3 is the next most frequent production size. This is for this reason that argued these rates promote optimal reading and editing. Another element that contributed to the selection of these figures is their easy transport and distribution to people with serious vision problems while concurrently these sizes are sizes that can construct maps production machinery. But of particular importance for sizing is the chosen scale, as it is called to be bigger than the maps of sighted or if they have the same size, should represent a smaller area.

The scale is, therefore, a significant factor to be taken into consideration in the construction of a tactile map is directly dependent on the size of the area wanted to represent and the type of information to be contained. Associated too, with the complexity of the map of the sighted and the space needed by each author for the signs in Braille that includes (Rowell & Ungar, 2003).

In view of the above and given the decisive representation of many, major islands the size of the map constructed are slightly larger than A4 to be more meaningful to palpation and not contain abundant elements in a small area. Alongside complied scale estimated at 1: 100,000 making the distances between the islands, corresponding reality.

The Braille signs, moreover, are a significant element of tactile maps which should be paid the utmost importance. The place chosen by the manufacturer should be

attached, should be examined and selected with care, since it is necessary to promote the comfortable reading of the map. Except for the portion that will be placed, one must watch and their number. If the number is large to will make the map tricky and can make the problem of the interpretation of (Jacobson, 1996). For this reason, the tactile of N.M.P.A.N.S. map contains only decisive information in Braille as the names of the islands and the Protection Zones have been identified.

Although only many researchers have studied the maps empirically (Jehoel, McCallum, Rowell, and Ungar, 2006), but has been observed the texture of the material, the distance of objects that are represented, their size and shape there are parameters that must be considered and take seriously (Rowell & Ungar, 2003). For example, the edges of objects, if abrupt, will cause higher neural activity to the receptors of the fingers than the gradual sloped or curved edges.

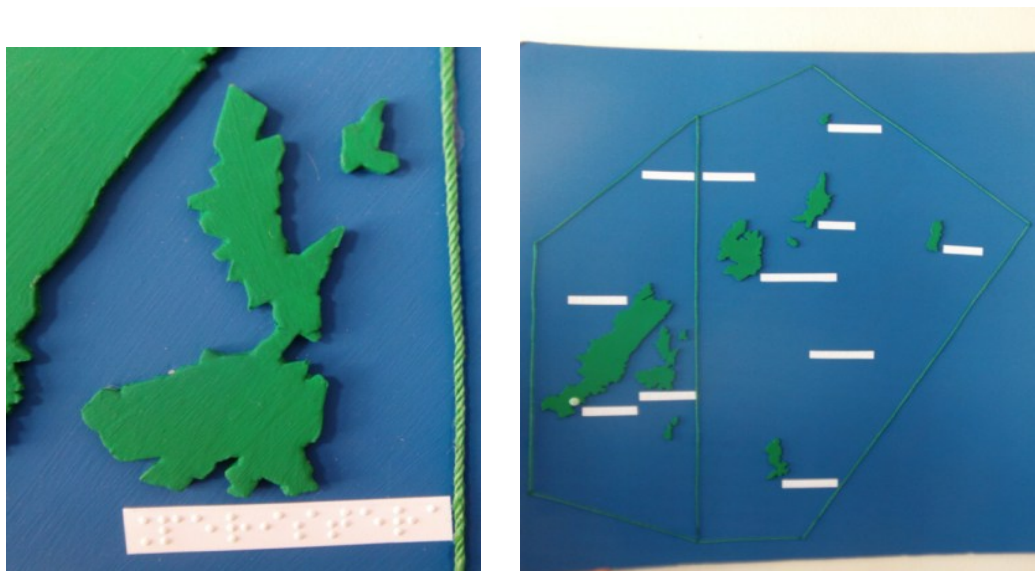
Also, the material is best to be hard to avoid the deformation, but not so hard as to make reading painful. The rough paper or rough plastic (to ensure and durability) and the microcapsule paper is the best choice of materials for the construction of a map (Jehoel, McCallum, Rowell, and Ungar, 2006)

An additional feature of tactile map symbols is its height, i.e. the distance from the base of the map to the top. This distance varies from map to map, the result of the production and manufacturing of maps. While, therefore, the plastic formed by heating is more critical than 1mm, the paper microcapsules are about 0,5mm, while the Braille printer produces dots in height 0, 25-1,0mm. Characterization of the first two materials is their compressibility.

Surveys of Jehoel, Dinar, McCallum, Rowell, and Ungar (2006) have been made to accurately determine the best-perceived height. Through psychophysics studies, we can get information about the sensitivities of the finger when examining objects. They are informed the fingertip can be utilized to interpret features like a difference of the represented object and the difference between a horizontal and a vertical object when the second normally ranges from 0,87mm to 2,36mm. Studies of the aforementioned researchers mainly focused on the sensitivity at the level of symbols, covering a gap in research on this topic. Their studies, therefore, the tactile representations can be seen even when they have height 0,16mm, height much less than that produced have a tendency to promote.

All these elemental features based where it is necessary to construct a tactile map adopted. The map was built from maquet-paper a resistant material, tough, and yet harmless to make palpation of the map a laborious process. By 5pm height is simple to determine the exalted elements. The borders of the Protected Areas were designated with string 2pm thick. Patitiri, the capital and that the port of Alonissos, symbolized by

a pushpin which the different material in texture, size, and shape than the paper made maquette makes it possible and easy to identify where.



3.3 The construction of the model

The model was used to represent one of the beaches on accessible beaches, the Lefto Gialos. In this beach, a visitor can be recognized as promote recreational activities including swimming and visit the accommodation spaces available. It is amusing to note each of these areas and suitably shaped sanitary room for disabled people, which contributed to the choice of the beach.

Before the start of construction of the model were performed taking beach pictures to simulate tactile. In this approach, there was a useful image of both natural and artificial environments, giving us the necessary information. The model was constructed built on four principles: the scale, economy, materials, and orientation. Moreover, was constructed a memorandum, as a basic instrument for the autonomous haptic processing of the model.

Scale is designed for the ratio of the portion of the map in the ratio of the corresponding surface of the earth (Snyder, 1993). The scale was taken into consideration and thought the size of the area we wanted to illustrate concerning the size of the objects we wanted to represent, as suggested by Jonathan Rowell and Simon Ungar.

When creating, and then construction of distinct objects (tavern representation models, bar, umbrellas, tables, etc.) has been complied size ratios allow the correlation of the above. Even when placing them on the air-plane was trying to choose the best

distance of objects. This became possible through the assistance made available one person with a serious visual impairment. Concurrently, an attempt was made keeping the actual distances between the buildings and objects that found in the physical space.

Another principle was observed as the economy. Being on this, a haptic device must contain, as far as possible, only the crucial information (Jacobson, 1996). The complexity of the information needed to provide and numbers of these emphasized the importance of the economy being represented object. Therefore, was a selection of the information would be useful to be represented. The selection took place more in terms of permanence and the importance of buildings and objects still in effect. The buildings of the bar, tavern, pool stairs and low walls reconstructed because it manufactures non-transferable and do not change from year to year. Even as critical information that will help the visually impaired person to make a mental map and to enable the second level, after the update, browse to the beach, the main objective of this work.

The construction of the model was based on the careful selection of materials. The texture of the materials chosen was as close as possible to the actual texture of the materials experienced in the environment. Where was it imaginable, materials were from nature (earth, gravel, stones) while in other cases there was an attempt to give as much as possible accurate representations. For instance, the sea assigned gel candle, giving a moist feel like water, while the forest symbolized artificial grass. Moreover, wooden structures like pergolas, tables, and a dock attributed to wood used in crafting. The surface of wooden objects and the construction itself differed so much that there was not the way to confuse the person would draw information from the model. The colour and the surface of the materials were another characteristic. Colour contrasts and avoiding materials that make intense reflections were the selection criteria to facilitate people with residual vision.

Moreover, attention was paid the principal orientation, for example, the orientation on the map or in the model, the relationship between the directions of the map and the corresponding guidelines in effect. In the lower left part of the model placed a compass, which shows the orientation of the beach, helping the reader to identify the point where the beach about the cardinal points.

Finally, a memorandum was built whose content was contained, the corresponding data. On the left side of a piece of maquet-paper, dyed, and cut to size, were glued parts materials symbolizing each element of the model. Adjacent to each item placed the sign in Braille by name. Making memorandum aimed at an objective and straightforward exploration of the model of the user.



3.4 Evaluation of model

Proper design and creation of haptic material are complicated procedures. Only many studies have been conducted to study specific tactile maps, empirically (Jehoel, McCallum, Rowell, and Ungar, 2006). To produce tactile materials is known many criteria that can be considered in their manufactures, like scale (Panteliadis & Argyropoulos, 2011), the economy, materials, and orientation.

The map and the model designed to inform people with visual impairments in the N.M.P.A.N.S. Information Center on the above criteria. However, to verify and test the effectiveness and the proper way of constructing the map of the model, we decided to carry out an evaluation of the material. The assessment came from people who offered us these informational materials to a Media Center, the participants that research. Any advice for improvement or change of material would be considered and would be implemented.

Model evaluation tools and tactile map were two questionnaires the content of which was on the construction criteria and other factors related to those calculated. They asked questions about the size, the material, the distance between the represented object and the number and amount of the elements of which it is composed.

Additionally, regarding the model evaluated the textures of the materials as to their similarity to those of the environment and of the differences between them, characterized in that aid in better understanding and assignment of materials to those of the note. Question about the effectiveness of the memorandum came while we did to ask for the help of the compass as a screening tool. Finally, they required more conventional proposals to improve the material.

3.5 Evaluation results

The evaluation results were encouraging and auxiliary. The people who took place in the assessment looked at the map and model detail and commented giving us all necessary information. Some evaluators and raised their respective proposals.

About the size of the map and the five participants argued it was appropriate for representing the entire Marine Park, one part of the area. The same went for the texture and the amount of material utilized for its construction. The position of the Braille tags considered applicably by the four participants and one in five felt those in strained to the point where the map is divided into Protection Zones.

Concerning the size of the model four of the five participants in the evaluation considered the applicable size. Even taking into consideration the size of the area and its numbers of elements it contains. Only one thought that the smallest size model will be not difficult to palpation, but not prevent the current size. The distance of the objects featured opposite at all. Specifically designed features considered and numbers of objects and their heights, with only one of the evaluators, the amount could be less.

The texture of materials and its relationship with the texture of the facts supported by materials like gravel and pebbles while, but as the buildings were rejected, which makes perfect sense and next. The texture of the gel as an effort to represent of water, considered as successful by four of the five participants, while the symbolism of the forest was considered sufficient by all.

The legend helped the five participants. Characteristics words of one participant are the following: If you use the memorandum and guide you to understand the entire model without help from someone else. Instead, the compass seemed beneficial to a single, partially sighted evaluator. The rest, the verbal instructions at the beginning of the treatment of the model had a better aim.

Finally, only one proposal was raised concerning the labelling of the beach entrance. The evaluator proposed the entrance to the beach is denoted in a bold and symbolic approach to no one understands the position of the model, without some guidance. This advice seemed function and was working to improve the structure at that point.

4. Conclusions-proposals

The natural wealth, especially in Protected Areas, is a universal good that must be enjoyed while protecting everyone. Actions for proper management, including information and awareness must be available to people with disabilities.

Having as a principle that access and participation are acceptable, but also a prerequisite for preserving the environment, we worked with the Management Body of the N.M.P.A.N.S. to intervene in an indispensable piece of information for visitors with disabilities. We examined the information material Information Center operating in the Body and saw the potential but also its shortcomings. After the investigation we conducted, we asked people with disabilities, particularly people with visual impairments, their view of the importance of information and participation in activities in a Protected Area. Simultaneously, we drew proposals regarding the tools for these actions. The proposals raised concerns about the creation of information, material, like tactile maps and models, and highlighted the activities being important that bring directly in contact with human nature, like Eco-routes.

Then, we implemented a few. Build the tactile map of N.M.P.A.N.S., which contains the principal islands and islets of the Marine Park and the separation into protective zones. Still, a mock beach constructed which together with the map were in the process of their suitability and received supportive criticism. This informative material, now, is an exhibit of Information Center of the Body and utilized to inform people with and without visual impairments.

The existence and continuation of such operations are the more indispensable for the benefits arising from them are multifaceted. An important benefit is the creation of environmental awareness, which will lead to the acquisition of appropriate attitudes and behaviours toward the environment. Also, at an individual level, the acquisition of knowledge, managerial thinking, participation desire to actions to protect the environment and the culture of communication and social skills are some positive inherited accessibility in a Protected Area (Minotou, 2011) as the N.M.P.A.N.S. Moreover, accessible areas, as an alternate tourism proposal, can yield significant gains in this area (Buhalis, 2012), always respecting the protected environment and promoting prosperity.

Considering the above and the legislation emphasizes the rights of disabled people to secure their autonomy and their participation in the societal, economic, and political life of the country (Article 21. Fri. the 6th) made the following suggestions regarding the N.M.P.A.N.S. and requires support from the state:

- Taking responsibility for the creation or modification of existing structures to become accessible.
- Promotion activities properly make to permit direct contact of people with disabilities with the environment.
- The assistance in the design and creation of accessible information material, which was launched at the initiative of the Management Body of N.M.P.A.N.S.

The responsibility for the creation and various ways' information and appropriately formatted spaces and activities are imperative to enjoy all eligibility and thus action for environmental protection.

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