Guide for Signaling, Information and Communication in Protected Areas

Earth Council

Project on Accessibility of Disabled Persons to National Parks and Protected Areas

INTRODUCTION

The Earth Council and the State of Costa Rica, through the National Council of Rehabilitation and Special Education, the Ministry of Environment and Energy, the Citizens Defense Council, and the Technological Institute of Costa Rica, have joined their efforts in order to design the first protocol in the world about accessibility for people with disabilities to protected areas. The result is the "Project of Accessibility to Protected Areas for People with Disabilities".

Its objective is to provide a series of instruments directed towards guiding, recommending and facilitating the access of people with disabilities to protected areas.

The protocol is divided into ten handbooks that may be used jointly or separately, according to the reader's interest. The subjects developed are the following:

1-GUIDE FOR MAKING AN ACCESSIBILITY DIAGNOSIS

2-GUIDE FOR CARRYING OUT AN ACCESSIBILITY PLAN

3-GUIDE FOR THE INTERPRETATION OF PROTECTED AREAS FOR PEOPLE WITH DISABILITIES

4-GUIDE FOR THE ACCESS TO PHYSICAL SPACE (design and materials)

5-GUIDE FOR SIGNALING, INFORMATION AND COMMUNICATION

6- GUIDE FOR PREVENTION AND SAFETY

7-GUIDE FOR CHILDREN AND ADOLESCENTS: A MULTI-SENSORY POINT OF VIEW OF OUR NATURAL SURROUNDINGS

8-OPENING THE DOORS TO PROTECTED AREAS

9-ACCESSORIES FOR TECHNICAL AIDS

10-SUSTAINABLE DEVELOPMENT AND HUMAN RIGHTS OF PEOPLE WITH DISABILITIES

This *Guide for Signaling, Information and Communication in Protected Areas* is part of the accessibility protocol. It has the following objectives:

General Objective

To carry out the necessary adaptations for creating an accessibility proposal for Protected Areas in the fields of signaling, communication and information, directed towards the general population and, more specifically, towards the users

with disabilities, and respecting the philosophy of the independent living paradigm.

Specific Objectives by Area:

- **Signaling**

Develop accessible signaling for the enjoyment of the resources provided by protected areas, through a labeling that satisfies all the possible needs of visitors with disabilities.

- **Communication**

Provide different communication options, so as to foster the participation of people with disabilities in protected areas.

- **Information**

Offer the visiting public in protected areas an efficient access to information about the general and specific characteristics of the place.

The diagnosis work that has been developed in these areas has managed to detect which are the needs of people with disabilities that must be fulfilled, in order to guarantee them a full enjoyment of their visit.

This finding becomes more valid each day, due to the increasing incursion of people with disabilities into activities that go beyond their family and educational environment, that is, activities that transcend the personal ambit. If we take the standpoint of the independent living paradigm, the individual relates to his or her internal being in search of self-achievement.

Thus, having accessible protected areas —designed on the basis of the diagnosis performed— guarantees the optimal satisfaction of the needs of the visiting public. The accessibility improvements have a positive effect not only on the target population, but also on the other people who use the protected areas. This way, they are more attractive for everybody.

We hope that this effort contributes to opening the doors to protected areas.

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I. TERMINOLOGY

Signaling
Method through which the general organization of a place is disclosed, as well as the location of objects and people, in order to grant users access and free movement throughout the surroundings.

Information
Knowledge that widens or specifies the characteristics of a place, an activity, an object or a person, and the relationships that may take place as of this knowledge, in order to offer an interaction with the environment.

Communication
Link formed with the individual. It mainly consists of transmitting a message by means of words, gestures, signs (be it visual or tactile), objects, facial expressions, intonation, and body posture. All people communicate using signs, gestures, the tension of a muscle, the movement of a hand, the change in direction of a look, and even a smile.

Multi-sensory
Sensory-perceptive mode, specially adapted to the interpretation of the environment through the different human senses, taking into account the individual importance of each of these senses and their complementary character. We must also consider the integral nature of the human being, which allows him to relate to the environment through his perceptions.

Tactile
Concerning touch, one of the most extensive senses, through which we perceive the shape, size and consistency of objects, the different textures and temperatures, among other characteristics. It is an essential element in self-perception (perception of the body in space) of all living beings.

High relief (embossed)
Two-dimensional expression of an object, a graphic or a word, which is elevated a centimeter off the surface. It is important because it allows for the bilateral symmetry usually obtained through sight.

Visual-Gestural Communication (CVG)
Alternative communication method on which all sign languages throughout the world are based. It does not possess a specific grammar, and it uses context as a complement for interaction. Gestures and body expression are used even within the visual field, without the person who is expressing himself ever leaving his place.

Costa Rican Sign Language (LESCO)

Alternative communication method used by people with hearing impairments. Sign language generally varies from country to country. They all have their own grammatical structures, and a syntax that is different from that of spoken language. It is complemented by body language and facial expression.

Braille

Alternative communication method used specifically for the process of reading and writing, and directed towards blind and visually impaired people. It is composed by a code of six embossed dots. It has a specific letter for each letter of the alphabet, and numbers from zero to nine. It also contains abbreviation codes known as dactilography.

II. PROPOSALS BY AREA

1. SIGNALING

1.1 Description of flora and fauna

The description of flora and fauna must be provided separately, since the techniques used to describe them are different.

1.1.1 FLORA

a. There must be a museum presenting the species of flora that are most representative to the area, which may be manipulated by visitors in the cases required, or else observed through a glass showcase with an adequate lighting control for people with visual impairments.

b. Videotapes with an interpretation in sign language (at least in two of them, if possible: the official language of the region and English), which also show the most representative flora, using a simple and friendly language that may be understood by different groups of visitors such as children, adults and senior citizens, regardless of their education level. There must also be alternative materials in audio cassette, and written in Braille for the groups that request it, with more detailed information and using specialized terms, in two languages: the official one and English.

c. Introduction of flora through personal experience, with the collaboration of a guide who is prepared to work with people with disabilities, and who also possesses knowledge about alternative and augmentative communication. The journey along the path must be carried out in a multi-sensory manner, taking into account smells, colors, textures, tastes, and sounds that the environment provides in order to interact with it.

1.1.2 FAUNA

There must be a museum containing a description of the most representative species in the region. This representation may be carried out through:

1. Footprints of the animals, which may be cast in their natural size and embossed.

2. The characteristic sound for each animal that emits one, in audio.

3. Simulations of the fur and skin of the animals.

4. Signs with the common and scientific names of the animals, written in Braille and in enlarged black-and-white letters. Also, simple information must be provided as to places where the species may be found, their behavior, their habitat, their feeding habits, and any other characteristic that defines them. This information must be provided in different ways: audio, Braille, black enlarged letters, and through an interpreter of sign language when required.

5. Whenever possible, it will be extremely helpful to have scale models of the most representative animals.

All the former must be carried out in order to ensure that people perceive the environment using all their senses. It is also important to remember that many of the animals in protected areas cannot be observed during visits, and that whenever the chance of doing this arises, it only lasts for some minutes, thus limiting the interaction with them. With the museum, it will be possible to fully understand the fauna of the parks. This will serve as an aid not only for people with disabilities, but also for the rest of the visitors, and thus the enjoyment of the national park will improve.

1.2 SIGNS ON PATHS AND VISITOR AREAS

Signs must have an appropriate color contrast, so that any person with visual impairments may perceive them. They must be placed at accessible places, so that any visitor may manipulate and observe them. The vegetation in the area must not compete with the sign as to visibility, and this sign must be placed on a movable base, in order to provide more visual access to information.

We recommend the use of contrast between dark and light colors, such as: yellow letters on a blue background, yellow letters on a black background, or white letters on a black background. The letters must not be brilliant and must be embossed.

The symbols used in signs must be the same ones that are used in maps and scale models (see section on Information).

1.3 PATHS

For paths to be accessible for the population with disabilities a railing must be placed along them; this railing will be made with whatever materials are more adequate to the area's climate, and in compliance with the administrative decrees of the park. We recommend that they be made out of wood, or any similar material that is more weather-resistant.

The railing serves as a support for people with limited mobility, and as a tracing guide for blind or visually impaired people. It will have a metal plaque on the top (preferably made of platinum, since it is a resistant and malleable material), in order to describe, in Braille, the location of the different pictorial signs and general signaling, such as lunch areas and restrooms.

A wall no more than ten centimeters high will be built parallel to the railing, so that people using canes may have a spatial reference of the path's direction. The materials recommended for its construction are cement, wood, or any other one that is adequate to the area's characteristics.

Like the railing, the wall will also have a metal plate with a length equivalent to one standard step on each place where there are signs or posters. This way, blind people will have a guide for their canes, and also an auditive stimulus to let them know that there is more information available on that spot.

The design of these two structures (railing and wall) is detailed in the *Guide for the Access to Physical Surroundings in Protected Areas*.

1.4 MAPS

Each map must have the necessary dimensions in order to fully represent the protected area, according to the area's cartographic sheet; at the same time, it must allow for tactile perception of the place's strategic spots, both cartographically and geographically.

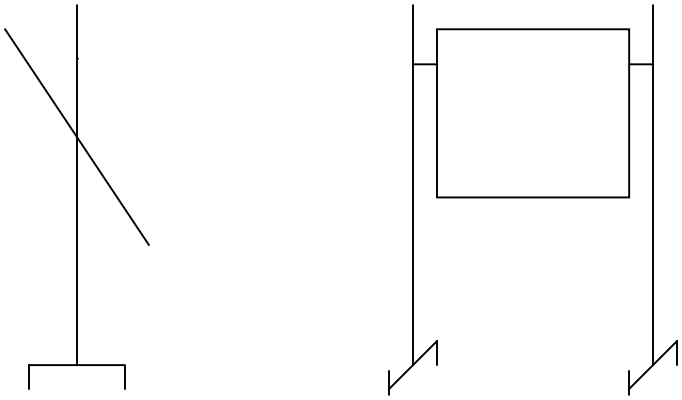
The objective of the map is to locate the visitor in the area's general context, and teach him where the most important geographical locations and relieves are located.

Only landmarks such as the entrance to the park, the visitor center, the parking lot, and the most interesting attractions (craters, sea, lakes, important rivers), must be included.

Materials may vary according to their sensitivity to touch, climate, and other conditions under which the map will be located. Thus, the characteristics of each place must be taken into account, and based on them, the most appropriate materials must be chosen.

When placing the map, we propose the use of an H-shaped structure with a central axis. The map will be placed on the upper part, and it will have a front-to-back movement, with an angle of no more than 15 degrees. (For more detailed specifications, see the *Guide for the Access to Physical Surroundings in Protected Areas.*)

Figure #1



The symbols used in the map must be the same ones that are used in signs and scale models (see section on Information).

2. INFORMATION

2.1 MULTI-SENSORY INFORMATION

As mentioned above, an adequate presentation of the information about each area's resources —paths, flora and fauna, among others— must be provided beforehand to the visitors, so that they know about the stimuli that they will find in the place.

Multi-sensory information must be made with materials that foster learning and use of the park, by stimulating every sensory area.

2.2 INFORMATION ABOUT SAFETY

All information about safety provided to the visitors must observe the recommendations made about the size of signs, where they must be placed, and the contrasts that must be used. We suggest that the same contrasts be used for

all kinds of signaling, including a visual surrounding border (one-centimeter-wide outline).

For more details about this topic, we recommend the *Guide for Prevention and Safety in Protected Areas for People with Disabilities*.

2.3 SUBJECTS

We recommend that subjects related to natural resources, protected areas, recreation, sustainable development, and accessibility to the surroundings, be included as part of the subjects in the regular teaching and special education curriculum. The purpose is to give students the possibility of getting to know the environment, by promoting the contact with nature, its enjoyment, and a continuous learning about these subjects.

The idea is to make the access to activities possible, thus respecting the philosophy of the independent living paradigm with a high participation of people with disabilities in recreational spaces.

For more details as to this subject, we recommend the *Guide for Children and Adolescents: Access and Enjoyment of Protected Areas, a Multi-sensory Point of View of our Natural Surroundings*.

2.4 PARK RANGERS

All personnel in protected areas must collaborate, since this will foster the implementation of any accessibility proposal, and since they are the ones who have a better knowledge about flora and fauna, and other specific data of each of the protected areas.

These workers must be trained and provided with basic information in the topic of disabilities, and in the use of alternative and augmentative communication methods, so that they can later provide information to visitors. For this purpose, we propose the following procedures.

2.4.1 Basic Knowledge

1. Kinds of disabilities

2. Consciousness-raising processes about disabilities

3. Independent living paradigm, activity and participation

(See the handbook *Opening Protected Areas*)

2.4.2 Alternative and Augmentative Communication Methods

1. Use of Visual Gestural Communication (CVG)

2. Sign language of the region and in English

3. Communication charts

4. Knowledge about the main Mayer Johnson seals

2.5 EXHIBITION PLACES

Currently, there are rooms with information about flora, fauna and geography of the place, although they do not necessarily fulfill the needs of all the visiting public. Thus, we recommend the following measures, which will help prepare a place that provides this information in a more appropriate and useful manner for all.

2.5.1 Museum or Visitor Information Center

This idea is not new or unachievable, since it is an essential part of every nature conservation center.

These stands must always consider that people need to know in advance about the most relevant data and characteristics: flora, fauna, and services that the area provides.

The access to a museum is essential. This has been confirmed after the diagnosis performed for the population with disabilities: just as the rest of the users, they require previous information about paths or other areas.

In the particular case of people with disabilities, having multi-sensory references (information perceived through different sensory channels) facilitates the access and comprehension of the place where they are, thus favoring their rights.

The museum we propose requires conscious planning based on the requirements of the target population, which makes the challenge even more interesting. The following is a detailed description of the main features for its design.

2.5.2 Distribution of the Place

- The museum must have an entrance door that is accessible to all people; it must have a ramp that allows the passing of two wheelchairs in opposite directions, or one wheelchair and one person standing next to it.

- It must have railings at the entrance to give support and relief to the visitor.

- The hallways must be wide enough for two wheelchairs to circulate.

- There must be embossed labeling and support in Braille and ink, with a movable base to allow different reading positions.

The information labels will be written in Braille and ink. Also, people who cannot access the information through these means, due to different reasons, may resort to videos and cassettes.

2.5.3 Exhibits (multi-sensory room)

- The exhibit areas must have benches or desks that allow the user to achieve a comfortable and safe position, in order to interact with the information material provided.

- The information materials must respect the different communication methods of the visitors (LESCO, Braille, symbols, verbal communication, CVG).

- The visitor may approach and manipulate the materials that are representative of the area.

2.5.4 Video

It must have a duration of approximately ten minutes, with the most relevant information for each one of the protected areas, and it must comply with the following specifications:

- Clear audio and simple vocabulary for all educational levels

- Text interpretation in Visual Gestural Communication (CVG)

- White letters on a black background at the bottom part of the video.

The audiovisual equipment must be located in such a way as to avoid the reflection of light on the screen.

2.6 Scale Model

It must have certain specifications, in order to ensure the use and easy access to data. Texture is essential, because of the sensory information it provides. The material must be resistant to constant manipulation and climate variations. It must be washable, and it can't be brilliant, since the shine produces visual distortions.

The areas that will be represented in the scale model (flora, fauna, relief, services and attractions) must be pointed out using the same symbols as in the maps' graphic designs and in signaling.

General Symbols for the Scale Model, Maps and Signs

The symbols must be explained in the bottom right-hand margin, both in Braille and ink, and with their respective contrasts.

Description of Symbols

Taking into account both the general population and people with disabilities, we have taken on the task of seeking the simplest way possible of expressing pictorial information and modifying the standard signaling in protected areas, in search of an accessible communication for all.

These changes consist of using high relief, simple figures, and the least amount of elements possible, in order to facilitate comprehension, taking into account the different educational levels of the visitors and the multi-sensory experience of the information.

In the specific case of written signaling, the adaptation suggested consists of placing in Braille the same information found in ink, and considering the contrasts used between background and text.

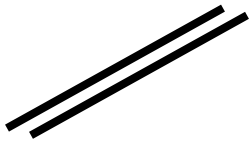
Except in cases specifically detailed for standardized international signaling, we recommend the following contrasts for the elaboration of scale models, maps and general labeling. These same specifications apply to the paths.

- White background (only for scale models and maps)
- Black background (for labeling)
- Yellow in high relief (for figures in labeling)
- Dark blue (for rivers)
- Dark sky-blue (for oceans and lakes)
- Brown (for sand)
- Dark green (for paths)

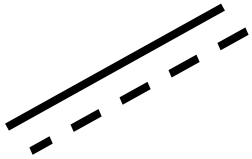
The direction in which the element pointed out is located must always be indicated by an arrow, which must also be embossed, with a black background and a yellow symbol (except in the case of emergency exits).

1 **Paths**
We recommend that they be made in high relief, with a cord three to five millimeters wide and a smooth texture.

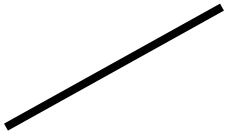
1.2 Main paths: double continuous line



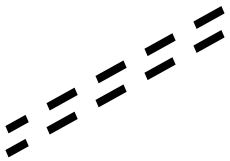
1.3 Secondary paths: one continuous line and one discontinuous one



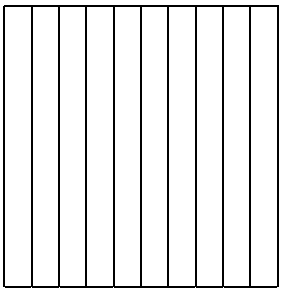
1.4 Tertiary paths: one continuous line



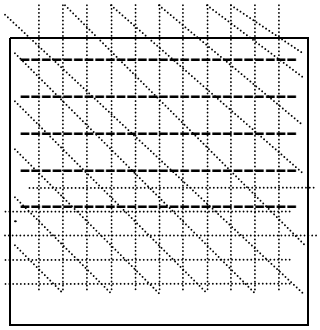
2. Rivers
We recommend that they be made in high relief, with a cord three to five millimeters wide and a rough texture. They must be represented with a double discontinuous line.



3. Oceans
Continuous stripes must be made; the sand is made with continuous dots in disarray, all in high relief.



Water



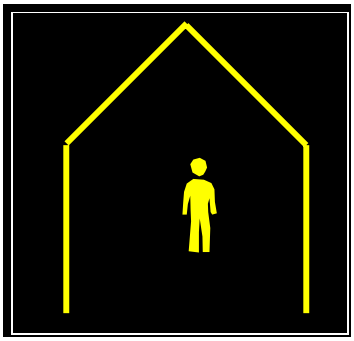
Sand

4. Buildings, recreation areas, and restrooms

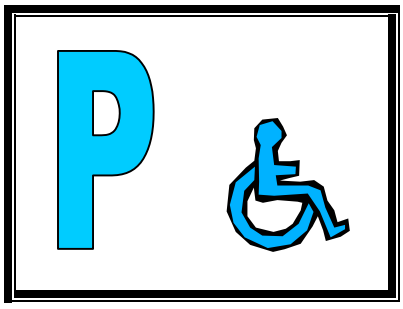
One yellow embossed arrow over a black background, placed under the label.

4.1 Buildings

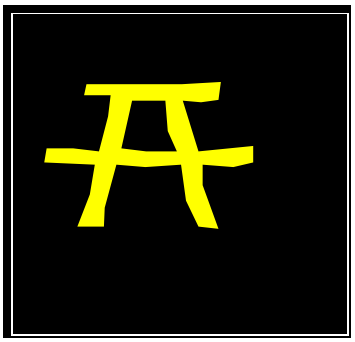
4.1.1 Administrative areas: a square with the outline of a peak-roofed house, and a human figure inside.



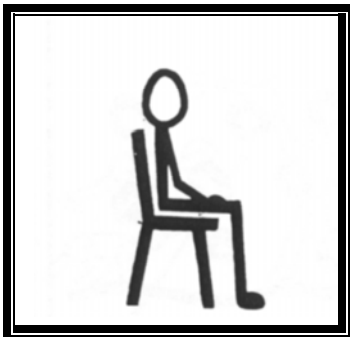
4.1.2 Parking lot: a square with an uppercase *P* and a lateral diagram of a wheelchair, in blue against a white background.



4.1.3 Lunch areas: a square with a lateral diagram of a picnic table.



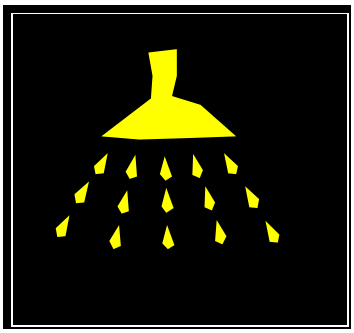
4.1.4 Rest areas: a square with a lateral diagram of a person sitting in a chair.



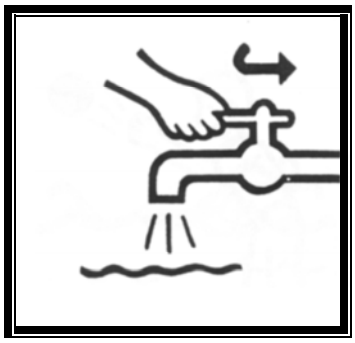
4.2 Restrooms:

4.2.1 Restrooms (toilets): a square with the standard diagram for ladies and gentlemen.

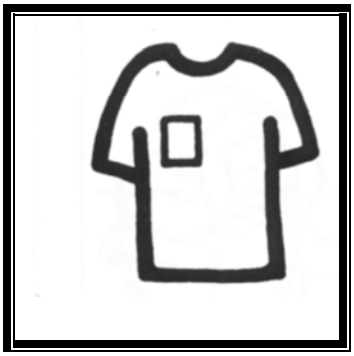
4.2.2 Showers: a square with the lateral diagram of a shower with falling drops.



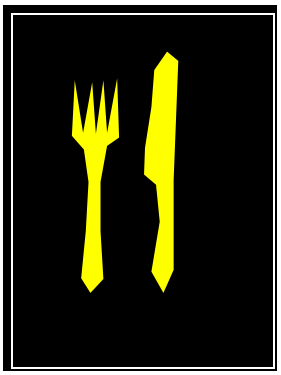
4.2.3 Water fountains: a square with the lateral diagram of a faucet.



4.2.4 Dressing rooms: a square with a frontal diagram of a T-shirt.



4.2.5 Food stands: a square with a frontal diagram of a knife, a spoon and a fork.

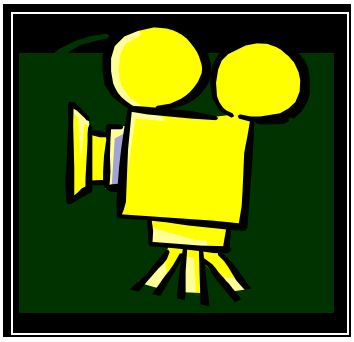


4.2.6 Trashcans: a square with the frontal diagram of a person throwing a paper in a trashcan.

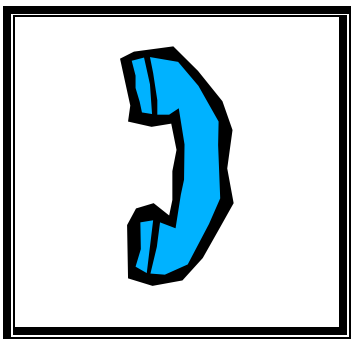
4.2.7 Information booths: a square with the international sign for information, in blue over a white background.

4.2.7.1 Rental of information about the park, in audio: a square with a frontal diagram of earphones.

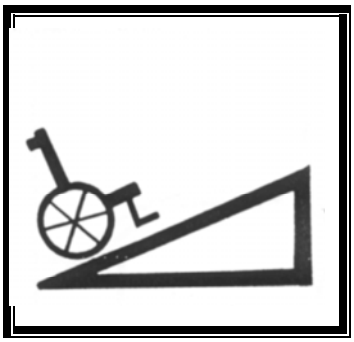
4.2.7.2 Information about the park, in video: a square with a lateral diagram of a video camera.



4.2.8 Telephones: standard symbol, in blue over a white background, with a black border.

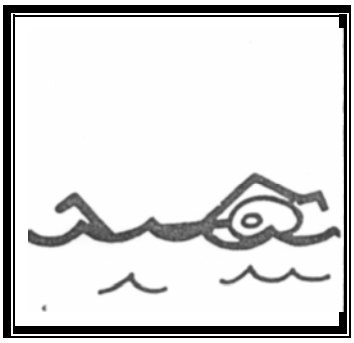


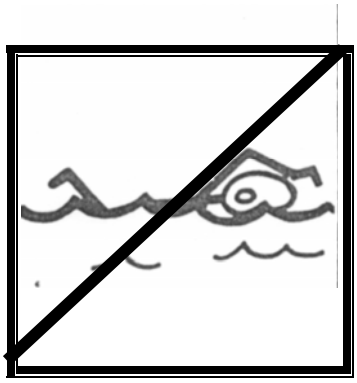
4.2.9 Ramps: a square with a lateral diagram of a ramp and a wheelchair.



4.3 Recreation areas:

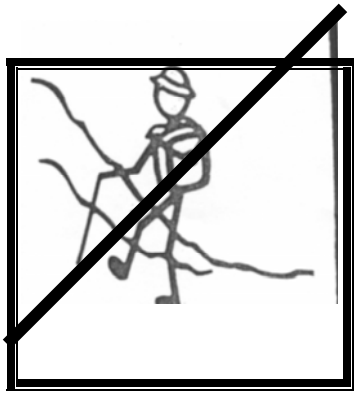
4.3.1 Swimming areas: a square with a lateral diagram of a swimming person. The prohibition of this activity would be indicated by this same symbol with a diagonal line.



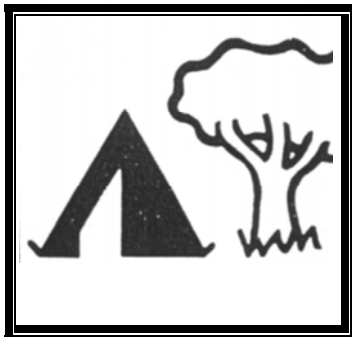


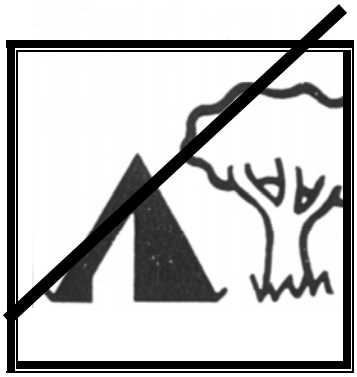
4.3.2 Fishing areas: a square with a lateral diagram of a person with a fishing rod held in his hands. The prohibition of this activity would be indicated by this same symbol with a diagonal line.

4.3.3 Climbing areas: a square with a lateral diagram of a mountain and a person climbing it. The prohibition of this activity would be indicated by this same symbol with a diagonal line.



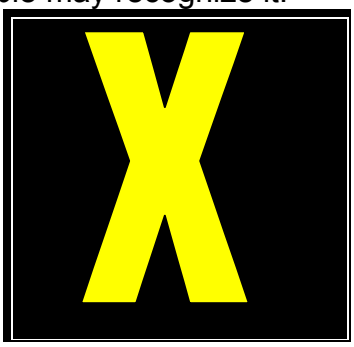
4.3.4 Camping areas: a square with a lateral diagram of a tent beside a tree. The prohibition of this activity would be indicated by this same symbol with a diagonal line.



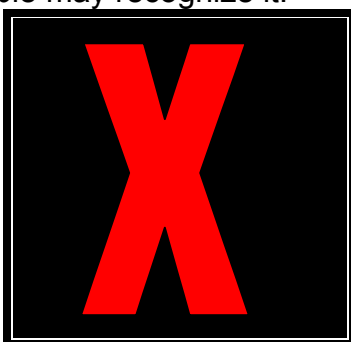


5 Safety Labeling:

5.1 Precaution: a square with the letter *X* in yellow. It is important to place this symbol in advance, so that people may recognize it.

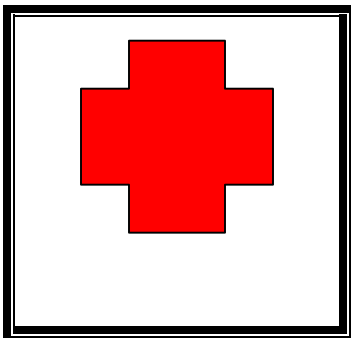


5.2. Prohibition: a square with a letter *X* in red. It is important to place this symbol in advance, so that people may recognize it.

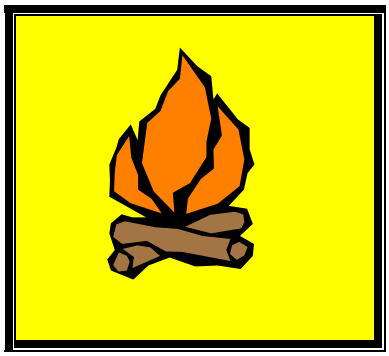


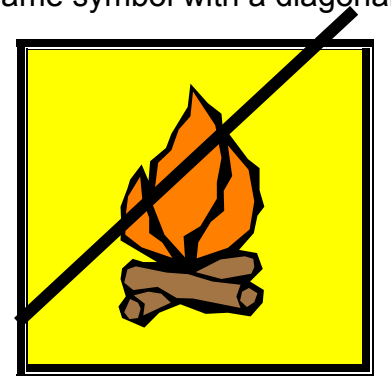
5.3 Danger of falling: a square with a frontal diagram of a person falling off an edge.

5.4 First aid: a square with a frontal diagram of the Red Cross symbol.



5.5 Fire: a square with a frontal diagram of a bonfire. The prohibition of bonfires would be indicated by this same symbol with a diagonal line.





5.6 Smoking: a square with a frontal diagram of the standard symbol. This symbol may have the contrasts exemplified, or may be made in blue over a white background.

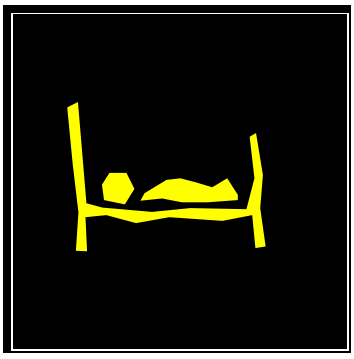
5.7 Emergency exits: a square with a lateral diagram of the standard symbol. This sign is designed in white over a green background.

5.8 Fire extinguishers: a square with a frontal diagram of the standard symbol. We recommend that only the outline of the extinguisher in yellow or red over a black background be used.

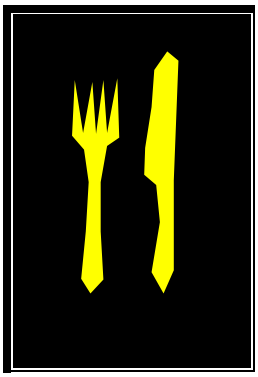
5.9 Poisonous vegetation: a square with a frontal diagram of a skull.

6. Tourist services:

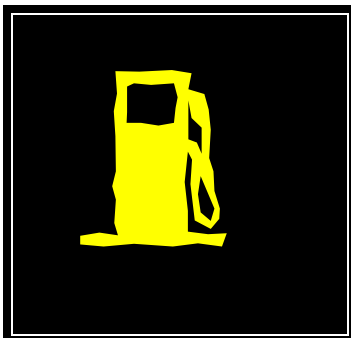
6.1 Hotels: a square with a frontal diagram of the standard symbol.



6.2 Restaurants: a square with a frontal diagram of a knife, a spoon and a fork.



6.3 Gas stations: a square with a frontal diagram of the standard symbol.



2.7 Printed Information and in Cassette

A guide for the recognition of the path must also be made, and it must have an interpretation of the place. Later, the information must be converted into the items detailed below.

- A guide written completely in Braille. The most economic resources for making it are:
  - Paper
  - Rented Perkins machine
  - Adequate binding

- A detailed description of characteristics and services, as well as of the journey through the path, recorded in a cassette.

The park must have the equipment needed in order to reproduce this information. This equipment may be rented to visitors, both in the language of the region and in English.

3. COMMUNICATION

3.1 COMMUNICATION METHODS

The information must be provided through different communication methods: Braille, sign language, and visual gestural communication (CVG), this last one with the purpose of covering those visitors who do not know the sign languages mentioned.

In the case of Costa Rican Sign Language (LESCO), we propose the creation of specific signs to designate the flora and fauna of each region, as well as for key concepts about biodiversity, natural conservation, and sustainable development. Thus, an additional option is offered so that all people who use LESCO may have an agile access to information. The participation of the Deaf People's Association must be engaged, in order to compose the signs according to their own standards.

The elaboration of a language about biodiversity in Costa Rica may open doors for other deaf communities in the world to gain an interest in composing their own language on the subject, according to the characteristics of their respective countries' protected areas.

Pictorial information must also be offered, with the embossed signs and symbols recommended for the configuration of maps and scale models, so as to make it uniform for all protected areas in the world. The rest of the alternative and augmentative methods must also be standardized to fulfill the visitors' needs.

Among these methods, we must include communication books or charts, miniature objects, and pictographic symbols. These must be understood regardless of the educational level of the visitors and their disability characteristics. Symbols must be standard for all kinds of signaling and information documents.

We must also remember that the area of communications is represented transversally within the elements that compose the areas of signaling and information. Thus, its specificity is different from the one that can be found in the other areas.

Chart N°1
Materials recommended for the elaboration of communication devices

Device	Material suggested
External and internal pivoting posters that are weather resistant	Wood with embossed letters or figures. The climate characteristics of each area must be taken into account. Other materials may be plastic or resin, also embossed. The contrast and shine of the signs' finish must be considered.
Internal light controls	Indirect white fluorescent light. Each area's weather must be considered, since this kind of lighting produces heat and may deteriorate the objects in the museum, maps or scale models, and may cause inconveniences for the visitors.
Footprints of the animals in the area	Plaster, resin, plastic, or some perishable material.
Representation of the animals in the area	Plaster or hard plastic, covered with textures resembling fur. Samples may also be used. Brilliance must be avoided.
Maps	Termofon, or any other light material that is easy to clean and resistant to manipulation.
Scale model	Resin, rope, waterproof paint, wood.