

## INVESTIGACIÓN/RESEARCH

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### PUBLIC OPINION AND PERCEPTION ON THE CONSERVATION OF ESTERO SAN JOSÉ DEL CABO STATE ECOLOGICAL RESERVE AND ITS AREA OF INFLUENCE

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#### ABSTRACT

The objective of this piece of research is to determine the degree of knowledge of the people who live and/or work in the area of influence of Estero San José del Cabo on the conservation of the area and their opinion and perception of government performance and work on conservation actions. During 2014, a qualitative and quantitative survey was conducted. The results show that 93% know what a natural protected area (NPA) is, 77% perceived the benefits to live/work near a NPA, only 38% know the existence of the management program, 36% perceived that their economic and social activities were affected after the creation of the NPA, 23% perceived improvement in employment opportunities; 74% believed that monitoring by managers is equal to zero, 65% of them perceive no financial and human resources and infrastructure are invested to manage the reserve. Finally, 52% believe that the implementation of policy instruments and administrative sanctions is equal to zero.

#### KEYWORDS

Public opinion - perception - conservation - natural protected area

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# OPINIÓN PÚBLICA Y PERCEPCIÓN SOBRE LA CONSERVACIÓN DE LA RESERVA ECOLÓGICA ESTATAL ESTERO SAN JOSÉ DEL CABO Y SU ZONA DE INFLUENCIA

## RESUMEN

El objetivo de esta investigación es conocer el grado de conocimiento de la población que vive y/o trabaja en la zona de influencia del Estero San José del Cabo sobre la conservación del área, así como su opinión y percepción sobre el desempeño y trabajo del gobierno sobre acciones para la conservación. Durante 2014 aplicó una encuesta cualitativa y cuantitativa. Los resultados muestran que 93% conoce lo que es un ANP, 77% percibe beneficios al vivir/trabajar cerca de un ANP, solo 38% conoce la existencia del programa de manejo, 36% percibe que sus actividades económicas y sociales fueron afectadas tras la creación del ANP, 23% percibe mejora en oportunidades de empleo; 74% opina que la vigilancia de los administradores es nula, 65% de ellos perciben que no se invierten recursos financieros, humanos e infraestructura para el manejo de la reserva. Finalmente 52% opinan que la aplicación de instrumentos normativos y sanciones administrativas es nula.

## PALABRAS CLAVE

Pública - percepción - conservación - área natural protegida

## 1. INTRODUCTION

The state of Baja California Sur (BCS) is a privileged geographical region with a natural, historical and cultural value of great significance both nationally and internationally, as it houses, among other reasons, a large number of Natural Protected Areas (NPA) located mostly in the Gulf of California. NPAs are among the most fragile and heavily disturbed systems by human activity, which makes it necessary to propose to evaluate management strategies, and recently also to adapt to the effects of climate change, to reduce risks and anthropogenic factors and natural phenomena, in order to preserve the integrity of ecosystems and their biodiversity.

The strategy for creation, consolidation and management of NPAs has become a key element in the conservation of our environment. Although Article 105 of our Constitution established the autonomy of municipalities, in the case of NPAs nationwide, the general policy of their decree, management and operation is set by the National Commission for Natural Protected Areas (CONANP). This institution supports its operation every six years in its Sectoral Development Plan that, in the case of 2007-2012, has the following strategic objectives: a) Retain the country's most representative ecosystems and biodiversity with the responsible participation of all sectors, b) Develop, promote, direct, manage and monitor programs and projects in protected areas for protection, management, including sustainable use, conservation and restoration; c) Promote the implementation of the Conservation Strategy for

Development, in order to improve the quality of life of local people and induce sustainable practices to mitigate negative impacts on ecosystems and biodiversity; d) Promote tourism in protected areas as a tool for sustainable development and cultural awareness and conservation of ecosystems and biodiversity through the 2007-2012 Tourism Program in Protected Areas; e) Strengthen cooperation and national funding and maintain international leadership in conservation, f) Achieve conservation of endangered species based on national priorities through the implementation of the 2007-2012 Program for Conservation of Endangered Species.

Baja California Sur is the state of greater coastal extension in Mexico, with more than 40% of its surface decreed as a NPA, as well as the state harboring most diverse of marine resources in Mexico, the Municipality of Los Cabos standing out for its physiography. According to the criteria developed by CONABIO expert panel, the Cape region is regarded as one of the 19 biogeographic provinces of the country. Also, in the biogeographic regionalization of the Atlas of Mexico of the Institute of Geography of the UNAM, the Cape region is considered a transition zone among different biogeographic realms.

In the municipality of Los Cabos are five areas for the protection and conservation of natural resources, Estero San José del Cabo (ESJC) standing out for its environmental, economic, social and cultural significance of great tradition for the municipal community. Within this biogeographic region, there is the only freshwater coastal lagoon represented by ESJC, as such, it is considered a wetland of international importance and is now a RAMSAR site and an Area of Importance for the Conservation of Birds. The goal of the declaration was to harmonize recovery, preservation and economic development through appropriate management of natural resources and promote research, education and participation of local people. The most important adverse factors mentioned in the RAMSAR declaration as the main problem in the ESJC are change in land use, urban growth of San Jose del Cabo and high pressure generated by tourism development. With this increase in the rate of erosion due to the impact of human activities (opening of roads, extraction of forest species and livestock).

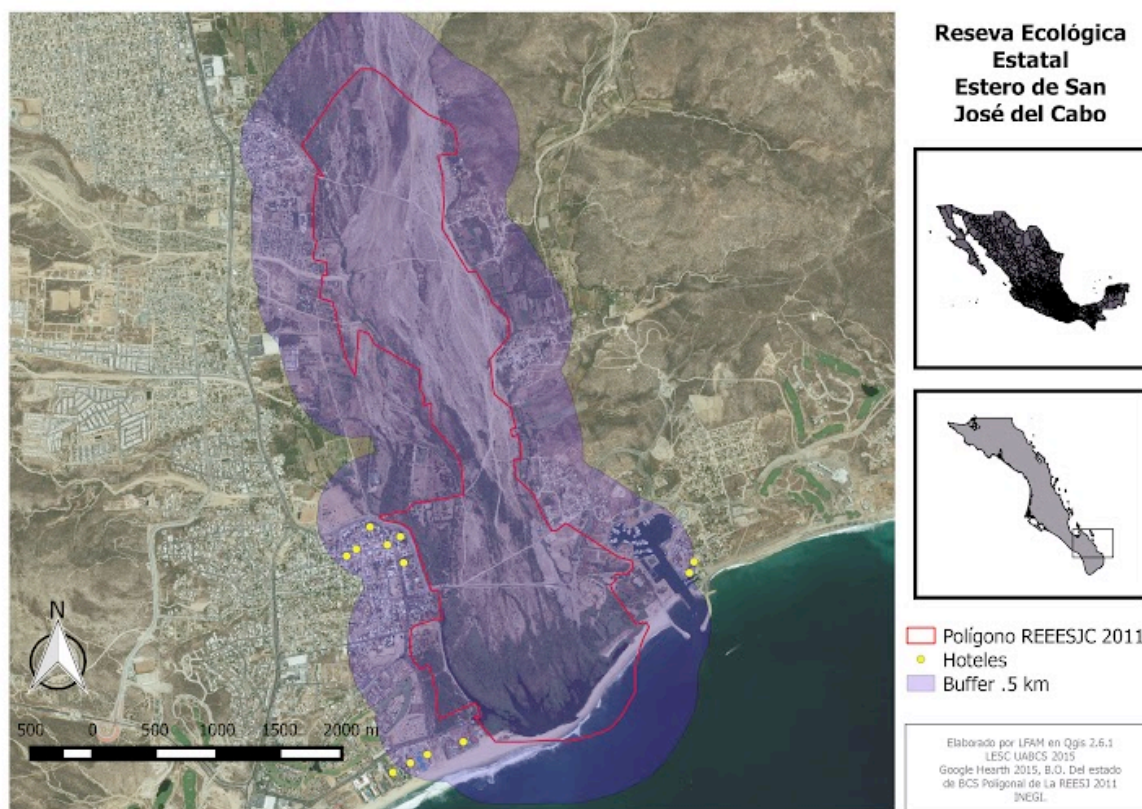
ESJC is an ecosystem of great water and biological relevance to the region because it harbors unique plant species and there are important corridors and wildlife refuges, features that are also of great importance for tourism in the area. It is also an area of scenic beauty to contrast with the arid environment of the region, which for decades has been a recreational area for local people and for activities of bird watching, horseback riding and boating, right in the center of one of the major tourist sites in Los Cabos.

The dynamic of the environment of ESJC is due to factors that vary in time and space and are directly related to one another, both locally and regionally. The volume of rainfall and water runoff is determined by the magnitude of the density of the vegetation cover. Deforestation and change in land use directly affect the degree of soil erosion, these factors together act and accelerate erosion, due to sediment transport to lowlands resulting in loss of natural attributes in these regions.

ESJC was declared State Ecological Reserve, under the category of Ecological

Conservation Zone, the official name is Estero de San Jose del Cabo State Ecological Reserve (REEESJC). The governmental authority with jurisdiction over the reservation is the government of the municipality of Los Cabos. The declaration was to harmonize recovery, preservation and economic development through appropriate management of natural resources and to promote research, education and participation of local people. For the past 20 years, the site of the reserve has undergone several modifications. The final declaration dated 4 April 2011 proposed a further modification to the polygon of the Reserve. A change in the area from 512-229 hectares to 766-684 hectares (Figure 1) was also decreed.

**Figure 1. Location of Estero de San Jose del Cabo State Ecological Reserve.**



**Source:** Prepared by Luz Armenta Fabiola Martinez. UABCS. 2015.

Also, its geographical location places the Reserve in a vulnerable situation, as it borders to the east, north and west on population centers, they put pressure on the Reserve and its ecosystems, especially when these locations concentrate 22% of the total state population and over 50% of hotel infrastructure.

Human activity in San Jose del Cabo city and southeast of the estuary (near La Playa town and the marina) borders on natural areas of the estuary and marks areas of drastic transformation of land use for urbanization, some of which would not allow urban development due to their physical condition (floodplain).

Over twenty years, there have been changes, modifications and abnormalities in the legal framework as described in the chronology detailed below:

-1985. The creation of the Recovery Committee for Estero de San José, which aimed to preserve the body of water and areas, is proposed. In 1991 a trust was managed in order to finance programs of restoration and a restoration program is proposed, in addition to the formal declaration of conservation as a more convenient mechanism to ensure its conservation.

-1993, October 8. The area of Estero de San José del Cabo is decreed to be a State Ecological Reserve under the category of Ecological Conservation Area. With a total area under protection of 472-97-36.74 ha, two major areas were established based on skills in the area of ecological importance: a core area encompassing 42-19-15.23 ha, which covers most of the lagoon body, it is approximately 10% of the total area of the reserve, and a buffer zone with a surface of 430-78-21.51 ha.

-1994, January 10. Reform decree dated October 8, 1993 by which the State Ecological Reserve is declared a natural protected area under the category of Ecological Conservation Area, the so-called "Estero de San Jose del Cabo" located in the municipality of Los Cabos. With a total area of 486-58-58 ha, and two areas of use: "A Core Zone 36-96-50 ha called "El Palmar" and a buffer zone of 449-62-08 ha.

-1994. On September 6. Reform decree dated October 8, 1993, of January 10, 1994, by which it is declared State Ecological Reserve, a Natural Protected Area under the category Ecological Conservation Area, the so-called Estero de San José. Leaving a surface of 472-97-36.74, it retains a core area of 42-19-15.23 and a buffer zone of 430-78-21.51 ha.

-2004, 24 May. The surface of the polygon (Official Gazette No. 31) with a total area of 512-22-98 ha is modified again. The decrees dated October 1, 1993, published in the official gazette of the Government of the State of BCS No. 1 as of January 10, 1994 are repealed, the decree dated August 22, 1994 published in the bulletin number 28 as of September 6 of that year, by which the surface of the REE and its core area were modified, is repealed.

-2008, July 20. Authorization to change the hotel lot approved for Puerto Los Cabos project in front of "The Beach" town, to "Estero de San José" ecological conservation area.

-2010, 10 December. The Basic diagnostic tests for re-demarcation of the ecological reserve called "Estero de San Jose del Cabo" ecological conservation area and the resulting polygon and construction box are submitted.

-2011, 28 February. Convention held by the State Government of Baja California Sur and the City Council of Los Cabos. Transfer of the administration of State Ecological Reserve called "Estero de San Jose del Cabo" Ecological Conservation Area to the municipality of Los Cabos.

-2011, April 4. Decree by which the polygon of "Estero de San Jose del Cabo" state ecological reserve is changed, the surface decreed being 766-68-4 512-22-98 hectares.

The main problems detected in the reserve are: a) Irregular construction of facilities within the Reserve as well as stables and motorbike rental; b) Deforestation due to illegal harvesting of palm leaf and complete extraction of palms; c) Dumping of debris, pans and trash up the Estero; d) Process prone to urbanization; e) Introduction of new species of flora and fauna; f) Frequent impairment of vegetation due to burning and increased fires; g) Fragmentation of topography and hydrology resulting from sidewalks, roads, with man-modified environment substituting for natural environment.

The aim of this article is to advance in the analysis of the importance of public opinion in addressing issues related to the environment, and contribute to better understanding of how people perceive these problems and assess environmental policies, taking as reference a region, the area of influence of REESJC, particularly sensitive to the importance of a natural protected area. Socioeconomic analysis of the area to know and understand the social processes that surround it is also envisaged.

## 1. ASPECTOS TEORICOS

The challenges to sustainability go through social, political, economic, technological and educational aspects, which will defy any program to go beyond some specific actions to achieve it.

The regulatory role of institutions depends on the discursive construction of problems. It is not the physical crisis of the environmental which causes social change, nor the destruction of certain socially valued goods, but the creation of images, identifiable problems that allow people to have different stances and perspectives, share a common picture of what can be considered a problem. Likewise, "a problem may have actual physical existence, but it is not socially perceived and accepted as such and ends up being socially irrelevant." It is the social standards and symbols, the ideology and power which assign priority of attention to a problem.

Although environmental issues are identified and evaluated in the domain of science, it is necessary that this information should be incorporated in the common sense to be taken as such. When this happens, the problems compete with one another to gain attention, legitimacy and social resources. That is the reason why environmental issues are often so low in the ranking hierarchy of social problems, compared with economic, political, educational issues, security or health.

This ranking is based on the socioeconomic needs of the people, which gives greater subjective value to that which people lack or believe they lack. In other words, the process of social classification of problems produces a kind of social parallax, understood as a break in the way reality is perceived, in which values and attributes are assigned to some problems that can even be scientifically and politically less important and others who might be more significant and important are ignored or

disdained, but they are not considered socially relevant. Prioritized needs and problems are contingent in each society.

The challenge of the major environmental problems we face today requires the training of qualified citizens to value and actively participate in their solution. These situations must be addressed from a systemic view of the environment in which the close relations of natural, social, economic, cultural and political type that underlie all environmental problems are displayed.

One of the challenges of modern environmental sociology is the analysis of the attitudes, values and behavior of the population to the problems related to the environment on a global scale (ie, those that affect the entire planet, as climate change, decreased ozone layer, loss of biodiversity, etc.).

It is well known the view considering that, for the study of environmental issues, it is very important to know the attitudes, values and behavior of the population, given the differences in the way these problems are perceived by individuals, by level study, age, sex, habitat of residence or geographical scale as a reference.

The complexity between population dynamics, socioeconomic processes and environmental conditions entails exploring possible methodological research to understand this relationship. To understand the relationships between physical and biotic conditions, the organization of production and the population at regional level, the methodological choices are based on the concept of socio-environmental analysis. It is of utmost relevance to conduct studies on population-environment relationship to understand how the demographic, political and / or economic processes affect the deterioration and / or environmental care. Understanding the demographic dynamics of the region and particularly its link with the change in land use would make it possible to make progress in the search for alternative development and adaptation, which contemplate prevent the depletion of natural resources and maintain production activities and the quality of life of the inhabitants.

Furthermore, according to the General Law of Ecological Balance and Environmental Protection (LGEEPA) one of its environmental policy measures is the creation and management of natural protected areas (NPAs) in order to preserve and protect biodiversity. Based on Article 3 of the Act, NPAs are "areas of the national territory over which the nation exercises sovereignty and jurisdiction, where the original environment has not been significantly altered by human activity or needs to be preserved and restored".

NPAs are strategic instruments; It is in these areas where various natural resources are preserved and become generators of multiple socioeconomic and cultural benefits. Their importance lies in the storage of resources for human use, provision of essential services such as water supply, food production, public health. They maintain key habitats, provide shelter, enable migration and movements of species, ensure the maintenance of natural processes, are the main source of drinking water for more than a third of the largest cities in the world and are of great importance in terms of food security worldwide. In short, knowing the empirical knowledge of the population about biodiversity and its environment is an important point of departure to and inclusive for decision-makers to know their feelings, and act accordingly as it is well known that if the authorities do not make decisions by consensus with the

communities, it is difficult for those communities to be adequately integrated to teamwork, for a good or common goal, especially in priority areas such as NPAs.

Also, the growing environmental sensitivity of society is reflected in the creation of national and international political organizations whose programs advocate, at least nominally, the preservation of the environment.

In that sense, the study of the relationship between public opinion and environmental policies has been admitted for a while and the efforts in public spending by governments in this area are explained in a way, by the influence of the population. It is also admitted that such influence is due less to the concern of citizens about the general deterioration of the environment than to the importance the population attach to specific environmental issues of particular sensitivity to local or regional scale and strong impact on behaviors and lifestyles.

## **2. METHODOLOGY**

In 2014 a survey especially for people living and / or working on what we call area of influence of REEESJC (from the polygon of the reserve up to a kilometer away) was developed and implemented, the survey consists of three parts: Socioeconomic section: general data of respondents; section on knowledge and perception of NPAs: on characteristics of the area, management program, permitted activities, benefits and / or harm of living and / or working in the area of influence of the reserve and opinion about the work of the authorities who run the area; The third section deals with the environment-economy-society relationship: problems, threats, priorities and social and governmental involvement. All sections have questions with response categories, both qualitative and quantitative variables serve the purpose of the investigation. The analysis is supported with field trips, informal discussions with the community, interviews with municipal authorities and survey results.

## **3. ANALYSIS AND DISCUSSION**

### **3.1 The Mexican experience. Socioeconomic analysis**

NPAs are continually threatened by the influence of anthropogenic and economic activities of human beings, the case of REEESJC is not an exception, as it is located in a major tourist resort and the pressure of real estate and tourism infrastructure continuously maintains the polygon boundaries threatened.

Within REEESJC there are currently no settlements; however, there are eight communities around it who live daily in the context and surrounding areas of the reserve.

The towns of Animas Altas, Animas Bajas, La Choya and La Playa are to the east of the study area, San José Viejo is to the northwest, while the community of San Jose del Cabo borders west to the estuary. The communities of Santa Rosa and Rosarito that were geographically between San Jose del Cabo and San Jose Viejo have been absorbed by the urban sprawl of San Jose del Cabo and are now colonies of the capital town of the municipality of Los Cabos, BCS.



The population growth rate in BCS in the 2000-2010 period is 50.4%, which indicates a very rapid growth in just 10 years. The total population of the communities in the area amounts to 79,519 people, the community of San José del Cabo standing out with a growth of 124% in 10 years due to major housing development and increased migration to San José del Cabo town.

The study area is characterized by human pressure mainly due to economic development in communities around the estuary. The economically active population of the study area is 36,530 people (46% of the total population).

The area is under strong pressure since tourism has boomed in the municipality of Los Cabos and has triggered the huge population growth in the area. Fourteen hotels were recorded within the area of influence (from the polygon of the reserve to 0.5 km away). Because of the fieldwork that took place in the outskirts of the estuary, we know that there are various tourist activities by private companies and hotels that surround it. In particular, the Holiday Inn Hotel, formerly Presidente Intercontinental Hotel, has a close relationship with the estuary.

Below is the result of surveys of the population living and / or working in the area of influence of REEESJC.

About the socioeconomic section, it was found that 32% of the surveyed population is from 51 to 60 years old, 29% of them are from 21 to 30 years, 23% from 41 to 50 years and 16% from 21 to 30 years. Out of the total respondents, 64% were male and 36% female, 29% said to be employed in the private sector, followed by self-employed with 25%, 15% also reported to be government employees (municipal, state and federal), 16% are housewives and 3% freelancers.

About the educational level of respondents, it was found that 39% have elementary and secondary schooling, 42% high schooling, 13% are college graduates, 3% have postgraduate courses, and 4% have no schooling. It was found that 64% are from San José del Cabo, with a smaller percentage, 19% of them, from BCS (excluding San José del Cabo) and 16% come from another state of Mexico. All work or live within the area of influence.

### **3.2 Knowledge and perception of the protected area**

So that the community can be involved in conservation and management of natural resources, we need to know their importance. The level of social involvement and identification with care and management strategies conducted by the government depends on the knowledge and perception of the social stakeholders on relevant environmental and socioeconomic issues.

In the study area, 93% of respondents said they know what a NPA is; also, when asked if they knew that the Estero San José has been declared NPA, 97% of respondents answered affirmatively. Furthermore, they were asked if they know what a RAMSAR site is, and the answers resulted in only 13% of respondents answering affirmatively, the same percentage said they knew that REEESJC is a RAMSAR site.

Ninety-three percent of respondents said they know the importance of living or working in the area of influence of a NPA like REEESJC. Also, 77% of respondents

said they perceive benefits to live or work near a NPA, 32% answered they had received damages, and 22% said they are indifferent. On their knowledge of the existence of a management program, only 38% of respondents said they know there is one, so the vast majority (62%) do not know.

Regardless of their response, they were told that the management program sets the permitted and prohibited activities that can be developed inside the polygon of reserve, for which they were asked if they believe that the actions permitted and / or prohibited in the management program have affected (positively or negatively) their traditional economic activity and social activities, the answers being that 36% said they had been affected, within that 16% said they had been affected positively and 10% negatively; 6% said it had not affected them in any way and 58% said they did not know.

About quality of life, 48% of respondents said they perceive that the people living and / or working in the area of influence of REEESJC have improved their quality of life after the declaration of the NPA, 42% of them said no and 10% perceive that they are indifferent as regards their quality of life after the declaration of the NPA.

About the perception that the people living and / or working in the area of influence of REEESJC have improved their employment opportunities and / or increased their income after the declaration of the NPA, 23% of respondents answered yes, 35% said no and 42% said they were indifferent.

Furthermore they were asked if they know the (state and / or municipal) government department in charge of management and care of REEESJC, the result being that 58% of respondents claim they do know, for which 94% of respondents said that the municipal government is the one that manages said NPA.

The approach of the authorities to society is very important, so the survey asked if the authorities responsible for administering REEESJC have been in contact (meetings) with the population living or working in the area of influence of the NPA, the result being that 87% of the responses were negative, the same percentage also expressed their willingness to participate in workshops, meetings, forums, etc. when they are called by the competent authorities.

### **3.3 Perception of environment, society and economy relationship**

As a result of the survey, one section focused on the relationship between the environment and society and economy, for which only 13% of respondents are currently involved with the conservation of REEESJC.

On the priority value of REEESJC as a NPA according to three themes: society, economy and environment; the results show that 71% of respondents said that society is a high priority issue and the rest is perceived as medium priority; on the issue of economy, 45% of respondents said it has high priority and 48% said it has medium priority; about the environment, 80% of respondents say it has high priority. It is noted that the economic issue is not a high priority for all respondents as opposed to social and environmental issues, almost half of respondents divide their perception into high and medium priority.

On the major problems / threats to conservation perceived in REEESJC, the results

show that 94% of respondents said that the generation of organic and inorganic pollutants is the main problem, followed by lack of commitment by managers with REEESJC with 77%, the same percentage is the high incidence of forest fires, it followed with 71% of respondents who mentioned that lack of involvement of society is also a problem and / or a threat to the estuary, also with the same 71 % were non-dissemination of the importance of REEESJC. It is noteworthy that within the category "Other" and when asked what?, the response of the presence of the wastewater treatment plant has a 16% of respondents.

One question about the behavior of managers of REEESJC was that we asked respondents to qualify it according to role and commitment, the most representative results show that 74% of respondents said that surveillance is equal to zero, also 65 % of them said that managers do not invest financial, human resources and infrastructure for the management of the reserve, 58% said the government has no approach to society, it is noteworthy that 52% of them said that the application of regulatory instruments and administrative sanctions amounts to zero.

Finally we asked about what management strategies should be a priority for managing authorities of the NPA, for which six alternatives were presented where respondents had to arrange them in order of priority, conservation being first, followed by rehabilitation of areas Thirdly came monitoring priority, followed by financial investment for the recovery of the area, fifth came environmental education strategy and finally approach and working with society.

#### **4. CONCLUSIONS**

The results show that the majority of the population knows and recognizes that REEESJC is a NPA run by municipal authorities. The vast majority of the population (77%) who live and / or work in the study area perceive social and cultural benefits of being close to the reserve, benefits far above the inhabitants of the Biosphere Reserve Sierra de la Laguna (REBISLA ) where only 57% of the population receives benefits for living within a NPA, while 17% believe that the declaration of the reserve has brought them no harm or benefits, it is assumed that this difference is due to the fact that REEESJC is located in an urban area and REBISLA in a rural area where public services and employment opportunities are very different.

Even with the biological relevance identified in REEESJC, people living / working in the area of influence to date know this information (enabling them to learn, identify, assess and participate in conservation) since they only perceive it as a 'nice place to go for a walk", regardless of the intrinsic value and ecosystem services that offers its conservation. We know that the perception of the public about the importance of conservation of a natural area is closely related to the degree of their knowledge of it and the intrinsic value of biodiversity. In that sense, although citizens recognize there is a problem of environmental conservation and are informed in general terms of the effects, it does not mean they find it easy to identify them, with this difficulty being a matter of utmost importance in the socio-environmental research intended to orient the policies for recovery, management and conservation, and as they do not identify them completely, they find it difficult to engage in pro-conservation actions.

In the case of REEESJC, as it is within the urban spot of the tourist resort of SJC, environmental vulnerability grows, as in the case of pollution in the body of water, agriculture, existence of livestock grazing that persists within the polygon, increased fires and tourist developments competing for a territorial space where nature offers greater economic benefits due to the growing demand of tourists looking for places with high biodiversity. Moreover, respondents perceive that the introduction of alien species and the wastewater treatment plant flowing into the estuary is a serious conservation problem. In short, respect for property rights and environmental education programs and awareness would be a strategy to mitigate the detected problems.

In our case study, it is prudent to note that the vast majority of the population (87%) says that the area-managing authorities do not approach the population, there are no disseminating campaigns or school campaigns.

Finally, that relationship between humans and their environment is largely a reflection of their environmental perceptions. Environmental perceptions are seen as the way in which each individual appreciates and values its environment and contributes elements that can potentially contribute to conservation. A concrete example is the case of NPAs, which are the environmental policy instrument most commonly used in Mexico for conservation purposes.

Some of the problems of NPAs are the fact that they operate in a highly contentious part due to the presence of competing interests of various stakeholders, including the State, international funding agencies and non-governmental organizations (NGOs), which oppose local interests and hinder the process of conservation. In addition, most of NPAs coincide with spaces, residence, conduction of agricultural activities or extraction and use of natural resources in different human populations, whose local knowledge and needs are not taken into account.

Thereupon, it is necessary to generate perceptions of environmental studies, taking into account different social stakeholders involved in NPAs to assess if when they are taken into account, the knowledge so generated can contribute to the design of truly public, more inclusive environmental policies and efforts towards the general interest. It is critical to take a holistic approach that includes social, ecological and physical aspects, in order to meet and strengthen links between ecological and cultural conservation in certain contexts.

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