

## **GALAPAGOS REPORT 2011-2012**

### **MARINE MANAGEMENT**

#### **EVALUATION OF THE EFFECTIVENESS OF MANAGEMENT OF THE GALAPAGOS MARINE RESERVE: KEY FINDINGS AND RECOMMENDATIONS**

MARIO VILLALTA GÓMEZ

#### **How to cite this document**

GNPS, GCREG, CDF, and GC. 2013. Galapagos Report 2011-2012. Puerto Ayora, Galapagos, Ecuador.

#### **How to cite this article**

Villalta G, M. 2013. Evaluation of the effectiveness of management of the Galapagos Marine Reserve: Key findings and recommendations. Pp. 123-130. In: Galapagos Report 2011-2012. GNPS, GCREG, CDF and GC. Puerto Ayora, Galapagos, Ecuador.

*Sources must be cited in all cases. Sections of the publication may be translated and reproduced without permission as long as the source is cited.*

*The authors of each article are responsible for the contents and opinions expressed.*

*The **Galapagos National Park Service** has its headquarters in Puerto Ayora, Santa Cruz Island, Galapagos and is the Ecuadorian governmental institution responsible for the administration and management of the protected areas of Galapagos.*

*The **Governing Council of Galapagos** has its headquarters in Puerto Baquerizo Moreno, San Cristóbal Island, and is the Ecuadorian governmental institution responsible for planning and the administration of the province.*

*The **Charles Darwin Foundation**, an international non-profit organization registered in Belgium, operates the Charles Darwin Research Station in Puerto Ayora, Santa Cruz Island, Galapagos.*

***Galapagos Conservancy**, based in Fairfax, Virginia USA, is the only US non-profit organization focused exclusively on the long-term protection of the Galapagos Archipelago.*



Photograph: Kathy Ladewig

# Evaluation of the effectiveness of management of the Galapagos Marine Reserve: Key findings and recommendations

Mario Villalta Gómez

---

Galapagos National Park Service

The Galapagos Marine Reserve (GMR) was created in 1998 through the Law for the Conservation and Sustainable Development of the Galapagos Province (LOREG, for its initials in Spanish), becoming the first marine protected area in Ecuador. A management plan, approved in 1999 and still valid, was designed in a participatory manner to ensure the conservation and management of the GMR as a multiple use reserve.

Twelve years later, an evaluation of the management of the GMR was essential. An evaluation process led by the Galapagos National Park Service (GNPS) and involving members of the Participatory Management Board and WWF, sought to highlight the strengths and weaknesses of existing management practices in the GMR.

This paper provides a synthesis of the evaluation process and the results obtained regarding the effectiveness with which the GMR has been managed since its establishment as a protected area.

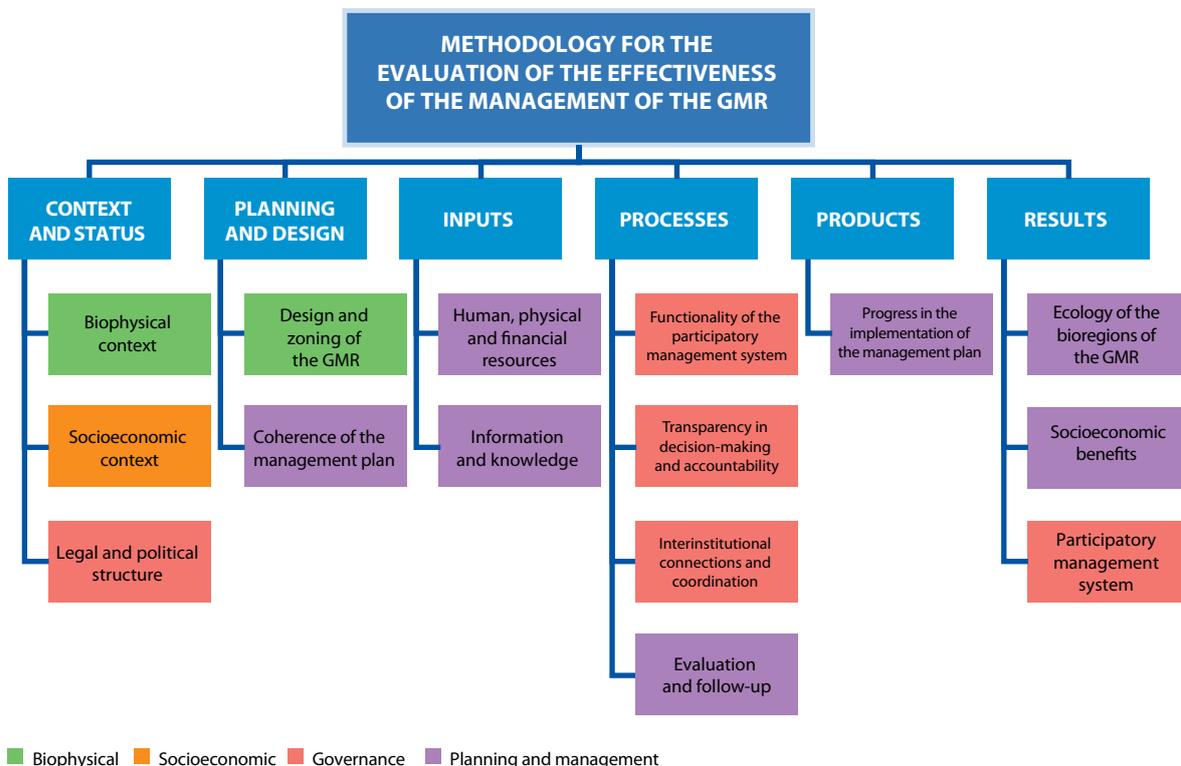
## Methodology

The evaluation methodology included review of design issues, and sufficiency and adequacy of management processes and their relationship with the management objectives of the GMR. It was based on guidelines, proposed by the World Commission on Protected Areas of the International Union for Conservation of Nature (IUCN), that focus on: 1) the context and status of conservation targets; 2) planning and design of the protected area; 3) inputs for management; 4) management processes; 5) products obtained, and 6) the impact of the results. Each focus area was reviewed in the context of the following aspects of management: legal, governance, biophysical, socioeconomic, and planning and management (Figure 1). Matrices and tables were developed as tools for data collection and analyses to help link all primary and secondary information sources.

A set of evaluation criteria was defined that allowed analysis of the available information related to the management of the GMR. At the beginning of each thematic area, results were summarized and each topic was assigned a rating reflecting a percent of "the most favorable condition," based on a qualitative assessment by the evaluation team, and supported by available information and data collected. The rating was assigned to each item as it related to the GMR as opposed to a comparison with other protected marine areas in the region or world.

After a thorough review of the relevant data; field surveys; workshops and consultations with stakeholders, regional institutions, and other government and community

representatives, the team gave a nominal rating to each indicator based on the rating scale (Table 1).



**Figure 1.** Key components of the evaluation of management effectiveness in the GMR.

**Table 1.** Rating scale used to evaluate the effectiveness of management.

ASSESSMENT	PERCENTAGE	RATING
Highly unfavorable	0 – 25	1
Unfavorable	26 - 50	2
Favorable	51 - 75	3
Highly favorable	76 - 100	4

Analyses covering governance, biophysical, socioeconomic, and planning and management aspects of each of the five thematic areas were completed, as was a detailed assessment of the participatory system, along with the identification of strengths and weaknesses of conservation targets and goals. The state of ecosystems and species considered conservation targets was analyzed based on the available information. In this process, information gaps were encountered, which helped to identify future research priorities. The Provisional Zoning Agreement was also analyzed and several recommendations proposed. Additionally, existing pressures and threats were assessed and recommendations were made for further analysis and mitigation. Economic activity was also examined by accessing the best available information related to the major fisheries (sea cucumber and lobster) and tourism. Tourism was analyzed as an economic activity of increasing

importance. Finally all stages of planning were carefully examined and recommendations made in an attempt to improve aspects of the organization, operation and management within the GNPS; this was accomplished by understanding the correlations between the various evaluation topics and how specific management issues have influenced the effectiveness of GMR management as a whole.

## Results

### General context and status

Overall, the Special Law for Galapagos (LOREG) provides a very positive jurisdictional framework for the GMR; therefore the rating for this variable was favorable (Table 2, Figure 2). The same applies to the legal and political framework for the GMR, since LOREG emphasizes the

need to manage the entire archipelago (land and sea) under a unified vision for the conservation of natural resources and the sustainable development of human communities. However, when regulations and follow-up were analyzed, it was discovered that many regulations and decisions were taken as a result of political pressure rather than technical criteria, which resulted in an unfavorable rating.

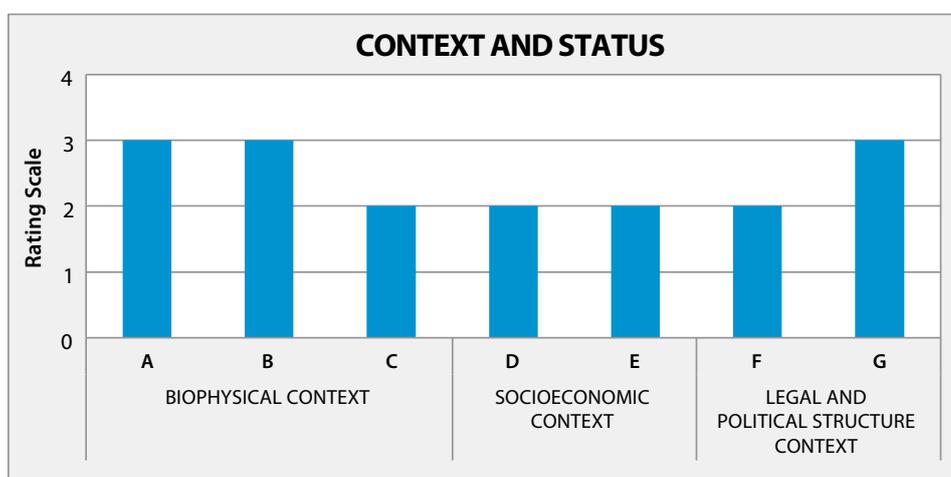
The rating for the biophysical context of the GMR was favorable. According to available information, the identification of conservation targets within the

GMR is relatively well developed, especially in terms of ecosystems, although the conservation status of some species is of great concern (Figure 2). However, while most of the bio-regions of the GMR have adequate protection, open water ecosystems require greater protection than currently exists.

The socioeconomic context was seen as unfavorable for effective management, due largely to the fact that the most commercially valuable fisheries resources have been affected negatively by poor management policies (Figure 2).

**Table 2.** Variables evaluated within the thematic area Context and Status of the GMR.

CONTEXT AND STATUS	
<b>A</b>	Composition and structure of conservation targets at the habitat level for each biogeographic zone of the GMR
<b>B</b>	Composition and structure of conservation targets at the species level.
<b>C</b>	Scope, impact, permanence and probability of natural and anthropogenic threats that affect the GMR.
<b>D</b>	Perception by stakeholders and authorities regarding the status of marine resources of the GMR and of human impacts on them.
<b>E</b>	Diagnosis and guidance for fisheries management in the GMR.
<b>F</b>	Organizational structure of the management of the GMR.
<b>G</b>	Relevance and coherence of the legal and political framework in relation to the biophysical and socioeconomic reality of the GMR.



**Figure 2.** Rating of variables within the thematic area Context and Status of the GMR (variables A-G defined in Table 2).

### Planning and design

Overall, the planning and design of the GMR received an unfavorable rating in terms of management effectiveness (Table 3, Figure 3). However, when analyzing specific variables some favorable components could be found; for example the existence of coastal zoning based on a participatory process that involves all users.

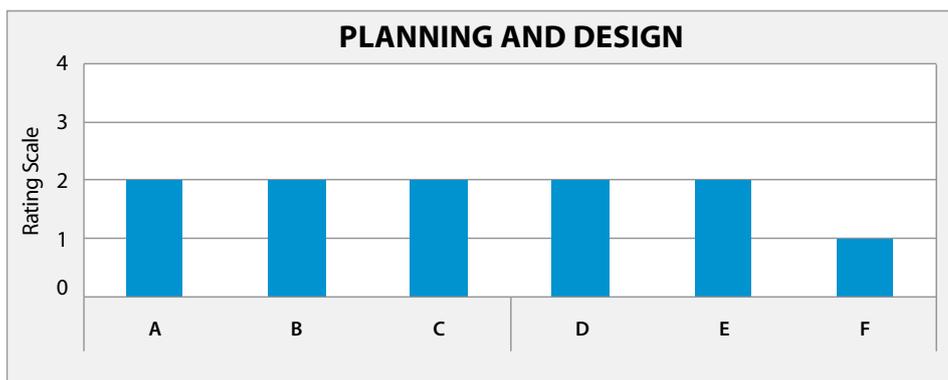
The evaluation of habitats in relation to zoning indicates a growing concern about the fishing and special use zones near the populated ports. Habitats that require

management measures and/or mitigation include coral zones, rocky areas (particularly those with resource extraction and near ports), coastal lagoons near ports, macro algae communities and areas of open water.

The GMR has a number of planning tools available at the national, regional and local levels and at each level there are different objectives and actions to address different issues. But the management plan is not always a useful tool for decision-making, especially because of insufficient financial planning relative to the GMR management objectives.

**Table 3.** Variables evaluated in the thematic area Planning and Design of the GMR.

No.	PLANNING AND DESIGN
A	Clarity and appropriateness of the objectives of the Management Plan.
B	Integrity of the zoning design for the GMR.
C	Connection of administration and management of the GMR with other planning instruments of local and/or regional and/or conservation initiatives.
D	Coherence of the programs and subprograms in relation to the objectives of the Management Plan.
E	Integration of management of marine and terrestrial management areas.
F	Coherence of the Annual Operational Plan in relation to the Management Plan.



**Figure 3.** Rating of the variables within the thematic area Planning and Design of the GMR (variables A-G defined in Table 3).

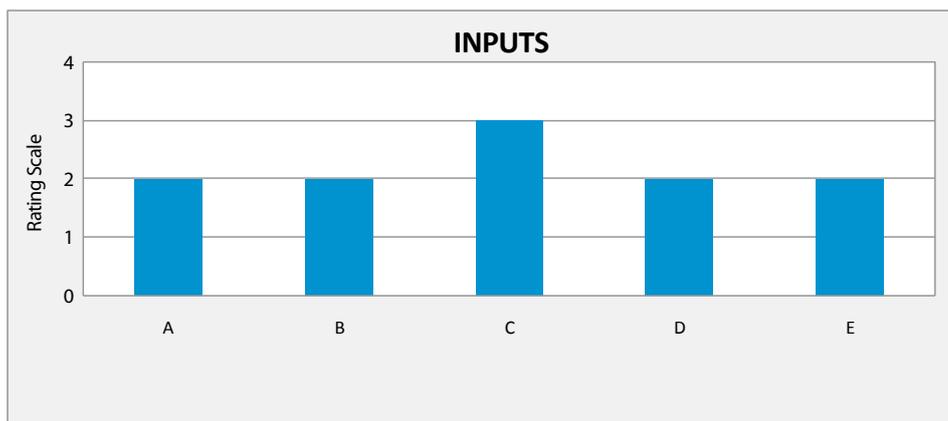
### Inputs

Although considerable information is available related to the GMR, the information itself as well as financial planning and learning systems for decision-making, are not yet consolidated. For this reason, the availability of inputs (human resources, operational and financial resources, information and knowledge) was rated as unfavorable (Table 4, Figure 4). For example, it is difficult

to establish the level of ecological integrity of the GMR, even though data is available from several studies at the species level, because the information on populations and productivity levels is very limited and therefore the necessary information does not exist.

**Table 4.** Variables evaluated within the thematic area Inputs for Management of the GMR.

No.	INPUTS
A	Availability of human resources.
B	Training of human resources.
C	Availability and status of physical resources: infrastructure and equipment.
D	Integration, availability and dissemination of reliable information (biophysical, social, economic, etc.) for decision-making in planning and management of the GMR by the GNPS.
E	Perception of the understanding and use of biophysical, social, economic and other information on the part of interested parties and local stakeholders.



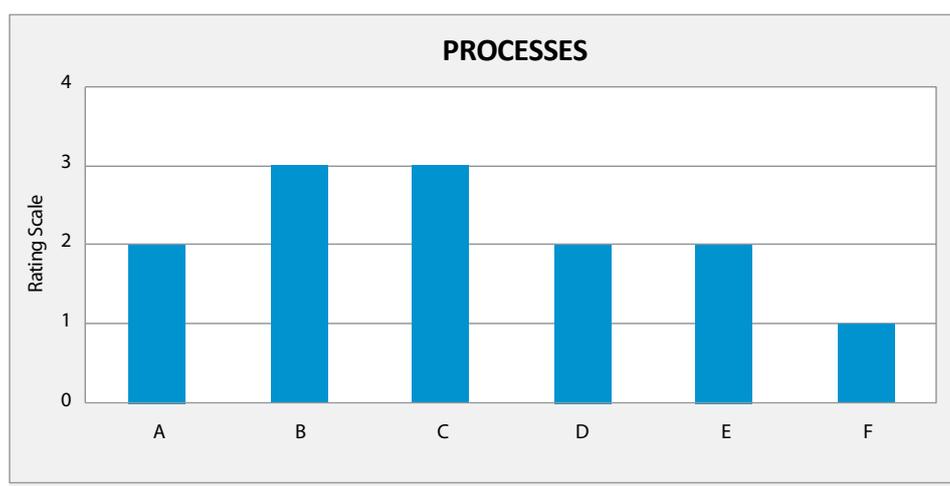
**Figure 4.** Rating of the variables within the thematic area Inputs for Management of the GMR (variables A-E defined in Table 4).

**Processes**

The overall assessment of processes (functionality of the governing body, transparency, accountability, institutional coordination, monitoring and evaluation) was equally unfavorable (Table 5, Figure 5), due largely to the widespread perception by users that decision-making is too slow and bureaucratic.

**Table 5.** Variables evaluated within the thematic area Processes of the GMR.

No.	PROCESSES
<b>A</b>	Capacity of users in participatory decision-making.
<b>B</b>	Existence and functionality of a system that permits users of the GMR to regularly participate in management decisions.
<b>C</b>	Level of transparency regarding decision-making for the management of the GMR.
<b>D</b>	Level of connection of decision-making at different levels of local and national government.
<b>E</b>	Perception regarding the effectiveness of the coordination with NGOs and other entities that cooperate with the GNPS to achieve the objectives established in the Management Plan.
<b>F</b>	Evaluation, follow-up and feedback to the Management Plan.



**Figure 5.** Rating of the variables within the thematic area Processes of the GMR (variables A-F defined in Table 5).

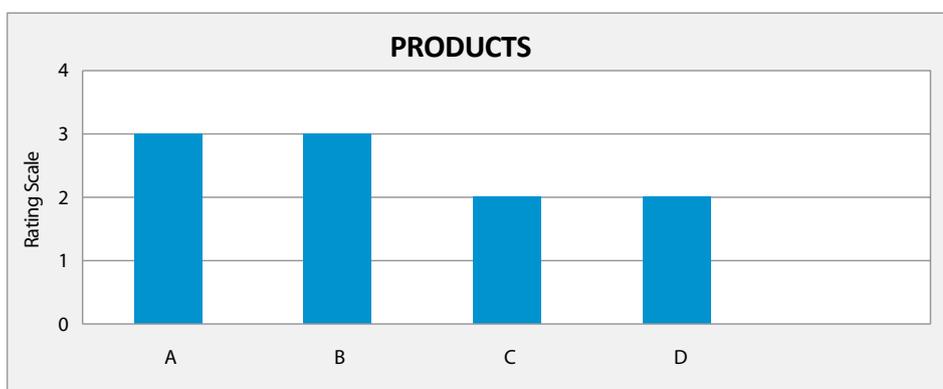
## Products

Although the participatory management system is active and has adopted a number of important management tools, it has also allowed many decisions to be based on political interests rather than technical criteria. Moreover there is a perception that there is a lack of decentralized decision-making and a lack of connection and coordination with other entities.

Clear strategies to overcome threats and pressures are also lacking (except for the Fishery Management Chapter). The fact that the Management Plan is not generally considered a management tool contributes to a considerable reduction in the effectiveness of the administration and management of the GMR (Table 6, Figure 6).

**Table 6.** Variables evaluated within the thematic area Products of the GMR.

No.	PRODUCTS
A	Level of progress of subprogram activities of the Management Plan and the Fishery Chapter.
B	Continuity in the management of the GNPS.
C	Level of compliance with zoning regulations and management.
D	Level of adaptation of the programs of the Management Plan to the biophysical and socioeconomic dynamics of the GMR.



**Figure 6.** Rating of the variables within the thematic area Products of the GMR (variables A-D defined in Table 6).

## Results

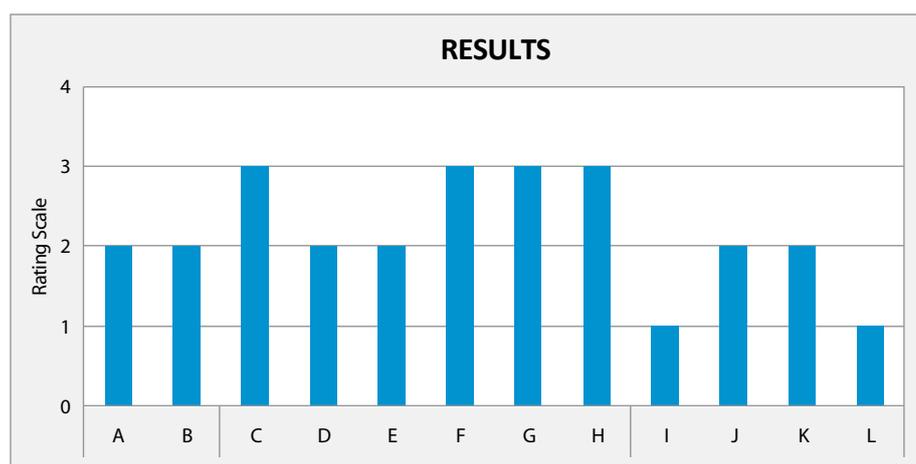
The overall assessment of the ecological integrity, the participatory management system, and the socioeconomic benefits generated by the GMR indicates that in general terms the conservation status of the GMR is unfavorable, given that the overall average rating is two (Table 7, Figure 7). The main reasons for the unfavorable rating include: a) some species are recorded as commercially extinct or their conservation status in recent years has moved into the category of possibly extinct; b) almost all species designated as conservation targets showed some

degree of threat; c) for many species the major threats are produced by natural events such as El Niño and La Niña, but an adequate monitoring program has not been established, and d) the perception of the local population in terms of socioeconomic benefits generated by the existence of the GMR is divided, with 62% believing that their quality of life has improved or remained the same since the creation of the GMR.

**Table 7.** General variables resulting from the Evaluation of the Effectiveness of Management of the GMR.

No.	RESULTS
A	Conservation status of key species in the GMR.
B	Ecological integrity of the different bioregions of the GMR (far north, north, west, south-central and Elizabeth Bay).
C	Perception by users of the social and economic benefits derived from the GMR.
D	Maintenance of fishery resources within sustainable limits.
E	Impact of tourism activities.
F	Economic profitability of the regulated and permitted uses of the GMR.

<b>G</b>	Level of tourist satisfaction.
<b>H</b>	Level of community support for the GMR.
<b>I</b>	Level of action on resolutions of the participatory management system and trends regarding the type of resolutions for which there is greater or lesser follow through.
<b>J</b>	Perception of users regarding the credibility of the participatory management entities.
<b>K</b>	Perception of the legitimacy of the GNPS in its role as the central authority for the management of the GMR.
<b>L</b>	Level of success in accomplishing the creation and strengthening of permanent structures and financing for the Participatory Management Board via the GNPS.



**Figure 7.** Rating of the final variables resulting from the Evaluation of the Effectiveness of Management of the GMR (variables A-L defined in Table 7).

## Conclusions and recommendations

This evaluation resulted in several comprehensive conclusions and recommendations, which will help in the development of a management plan that will establish effective strategies and actions to improve the management of the GMR. The main conclusions and recommendations are:

- The impact of the participatory management system has been favorable; it is an unprecedented system that since the creation of the GMR has allowed users to participate meaningfully in decision-making related to the management of one of the world's largest protected marine areas. Furthermore, this system offers the world a valuable example of institutionalized mechanisms of participation for the management of protected areas.
- Although in many specific cases the assessment values describe an unfavorable situation, the overall evaluation showed a number of significant positive results, such as the creation of management tools including the GMR Management Plan, and more specifically the Fishery Chapter, coastal zoning, the Fishing Register, and the 5-Year Fishing Calendar.
- The participatory management system has been operational for 12 years despite financial challenges and a highly unstable political environment.
- This demonstrates the high level of resilience of this mechanism and suggests that it should be strengthened and additional actors should be integrated.
- The need to integrate the management of the two protected areas of Galapagos (marine and terrestrial) is evident. This should be accomplished with clear conservation objectives and effective policies and strategies that will address the key management issues and their relation to human settlements.
- The GMR Management Plan must be reformulated and integrated with the Management Plan of the Galapagos National Park. It is important to incorporate emerging issues, clear conservation objectives, and well-defined strategies and indicators to measure management success and/or adapt management to changes that occur.
- The institutional structure of the GNPS should be reviewed and redesigned to better support the Park's mission and to overcome current shortcomings that limit its management capacity of the GMR and its ability to respond to increasingly complex challenges.
- Many management decisions have been made without sufficient technical and scientific information.



Photograph: Jo Anne Rosen

An integrated information system must be established to facilitate appropriate management decisions. The Charles Darwin Foundation and other NGOs should be involved in this process.

- The Interim Zoning Agreement for the GMR should be updated and made compatible with terrestrial zoning and expanded to include the entire GMR (including open water, seamounts, rocky reefs and other ecosystems that are part of the reserve), so that it reflects new available biophysical information and current pressures and threats.
- Fisheries and tourism policies should be reviewed and improved as they are key to the management of the GMR.
- Patrolling, control and law enforcement in the protected areas should be organized as a single process of the GNPS; there should be constant communication between the GNPS and the appropriate judicial bodies.
- The expansion of urban settlements puts great pressure on protected areas and their resources. The GNPS should work with municipalities and other government entities in the development and implementation of a global plan to ensure sustainable development.

### **Acknowledgments**

Special thanks to World Wildlife Fund (WWF), especially to Eliecer Cruz (Eco-regional Director), for technical and financial support for the development of the process to evaluate the effectiveness of management of the GMR.