



## **MSC Public Certification Report**

### **Baja California Lobster Fishery, Mexico MSC Re-Certification**

Version 5, 16 June 2011

The fishery evaluated in this report:

Species: *Panulirus interruptus*

Geographic Area: Central Baja California, Mexico. This area extends from Cedros Island in Baja California through Punta Abreojos in Baja California Sur and includes Isla Guadalupe approximately 250 km off the coast of Baja California, Mexico.

Fishing Method: trap

Fishery Management: Federal Government of Mexico through the regulatory agency CONAPESCA

Accredited Certification Body:  
Scientific Certification Systems  
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## **Versions Issued**

| Version No. | Date           | Description Of Amendment    |
|-------------|----------------|-----------------------------|
| <b>1</b>    | September 2010 | Client Draft Report         |
| <b>2</b>    | October 2010   | Peer Review Report          |
| <b>3</b>    | January 2011   | Public Comment Draft Report |
| <b>4</b>    | 16 May 2011    | Final report                |
| <b>5</b>    | 16 June 2011   | Public Certification Report |

## **MSC scheme documents:**

MSC Accreditation Manual Issue 4

MSC Fisheries Assessment Methodology (FAM) Version 2.1

MSC TAB Directives

MSC Policy Advisories

## Contents

|   |    |
|---|----|
| Preamble.....   | 4  |
| Abbreviations .....   | 5  |
| 1. Introduction.....  | 7  |
| 2. Summary .....  | 7  |
| 2.1. The Assessment Process.....  | 7  |
| 2.2. Scoring Methodology .....  | 9  |
| 3. Certification Recommendations and Performance Scores .....           | 9  |
| 3.1. Meeting Conditions for Continued Certification .....               | 10 |
| 3.1.1. General Conditions for Continued Certification.....              | 10 |
| 3.1.2. Specific Conditions for Continued Certification .....            | 10 |
| 3.2. Certification Determination.....                                   | 11 |
| 4. Background to the Report.....  | 12 |
| 4.1 Assessment Team/Authors .....                                       | 12 |
| 4.2 Peer Reviewers.....   | 12 |
| 4.3 Summary of Previous Certification .....                             | 12 |
| 4.4 Summary of Meetings.....  | 13 |
| 4.5 Submission of Data on the Fishery.....                              | 14 |
| 5. California Spiny Lobster Fishery in Mexico.....                      | 15 |
| 5.1 Unit of Certification .....   | 15 |
| 5.2 Target Species and Life History .....                               | 16 |
| 5.3 Distribution.....   | 17 |
| 5.4 Geographic Setting of the Fishery .....                             | 17 |
| 5.5 Background of the California Spiny Lobster Fishery in Mexico .....  | 17 |
| 6. Fishery and Management System .....                                  | 17 |
| 6.1 Evolution of the fishery .....                                      | 17 |
| 6.2 Management system .....   | 18 |
| 6.3 Stock assessment and References Points.....                         | 19 |
| 6.4 Harvest Strategies and Tactics.....                                 | 20 |
| 7. Fishery's impact on ecosystem.....                                   | 21 |
| 7.1 Ecosystem .....   | 21 |
| 7.2 Bycatch - Retained and discard species.....                         | 22 |
| 7.3 Endangered, threatened and protected (ETP) species .....            | 22 |
| 7.4 Habitat impacts and lost gear.....                                  | 23 |
| 7.5 Trophic relationships.....  | 23 |
| 8. Tracking and Traceability .....                                      | 24 |
| 8.1 Traceability within the fishery .....                               | 24 |
| 8.2 At-sea processing .....   | 24 |
| 8.3 Points of landing .....   | 24 |
| 8.4 Eligibility to enter Chains of Custody .....                        | 24 |
| 8.5 Target Eligibility Date .....                                       | 24 |
| 9. Other Fisheries in the Area .....                                    | 24 |
| 10. MSC Principles and Criteria.....                                    | 25 |
| 10.1 MSC Principle 1 – Stock Status and Harvest Strategy .....          | 25 |
| 10.2 MSC Principle 2 – Ecosystem.....                                   | 25 |
| 10.3 MSC Principle 3 – Management .....                                 | 25 |
| 10.4 Interpretations of MSC Principles for Performance Assessments..... | 27 |
| 11. Assessment Team Performance Evaluations .....                       | 27 |
| 11.1 MSC Principle 1.....   | 28 |

|   |    |
|---|----|
| 11.2 MSC Principle 2.....   | 34 |
| 11.3 MSC Principle 3.....   | 46 |
| 12. Action Plan for Meeting Conditions .....  | 59 |
| 13. Peer Review, Public Comment and Objections .....  | 61 |
| 14. MSC Logo Licensing Responsibilities.....  | 61 |
| 15. References .....  | 62 |
| Appendix I – Sample invoices for bait purchase for the fishery .....  | 66 |
| Appendix II: Minutes if the September 24, 2010 Meeting, Ensenada, Baja California and translation of relevant section ..... | 67 |
| Appendix III– Peer Review Comments and Team responses.....  | 69 |
| Peer Reviewer General Comments.....   | 69 |
| Peer Reviewer Comments on Body of Report.....   | 70 |
| Peer Reviewer Comments Related to Scores and Rationales .....   | 76 |
| Appendix IV- Comments on Nominated Peer Reviewers .....   | 86 |
| Appendix V: Stakeholder comments to pcd and Assessment Team responses .....   | 87 |

## **PREAMBLE**

This report is the sole responsibility of SCS. All advice and comments from Assessment Team members, peer reviewers, client, fishery managers and the MSC have been reviewed by SCS and incorporated into the report by SCS as deemed warranted.

## ABBREVIATIONS

|              |  |
|--------------|--|
| AHP          | Analytical Hierarchy Process   |
| ASI          | Accreditation Services International   |
| BCS          | Baja California Sur, Mexico  |
| B            | Biomass  |
| CB           | Certifying Body  |
| CCNN         | <i>Comités Consultivos Nacionales de Normalización</i>   |
| CEPA         | <i>Consejos Estatales de Pesca y Acuicultura/ State Council for Fisheries and Aquaculture</i>                        |
| CIBNOR       | <i>Centro de Investigaciones Biológicas del Noroeste</i>   |
| CICESE       | <i>Centro de Investigación Científica y Educación Superior de Ensenada</i>   |
| CICIMAR      | <i>Centro Interdisciplinario de Ciencias Marinas</i>   |
| CNP          | <i>Carta Nacional Pesquera</i>   |
| CNPA         | <i>Consejos Nacional de Pesca y Acuicultura</i>  |
| COBI         | <i>Comunidad y Biodiversidad, A.C.</i>   |
| COI/IOCARIBE | <i>Comisión Oceanográfica Intergubernamental (UNESCO)/Comisión de la UNESCO para el Caribe y Regiones Adyacentes</i> |
| CONANP       | <i>Comisión Nacional de Áreas Naturales Protegidas</i>   |
| CONAPESCA    | <i>Comisión Nacional de Acuicultura y Pesca</i>  |
| CIBNOR       | <i>Centro de Investigaciones Biológicas del Noroeste, S.C.</i>   |
| CRIP         | <i>Centro Regional de Investigación Pesquera</i>   |
| CPUE         | Catch Per Unit Effort  |
| DOF          | <i>Diario Oficial de la Federación/ Official Federal Gazette</i>   |
| ENCB         | <i>Escuela Nacional de Ciencias Biológicas del Instituto Politécnico Nacional</i>                                    |
| ENSO         | El Niño Southern Oscillation   |
| ETP          | Endangered, Threatened and Protected species   |
| ERA          | Ecological Risk Assessment   |
| ESD          | Ecologically Sustainable Development   |
| F            | Fishing mortality  |
| f            | Exploitation rate  |
| FAM          | Fisheries Assessment Methodology   |
| FAO          | Food and Agriculture Organization [of the United Nations]  |
| FEDECOOP     | <i>Federación Regional de Sociedades Cooperativas de la Industria Pesquera Baja California</i>                       |
| INAPESCA     | <i>Instituto Nacional de la Pesca</i>  |
| IUCN         | International Union for Conservation of Nature   |
| LFMN         | <i>Ley Federal Sobre Metrología y Normalización</i>  |
| LGPAS        | Ley General de Pesca y Acuicultura Sustentables  |
| LRSG         | Lagged Recruitment Survival and Growth   |
| MSC          | Marine Stewardship Council   |
| MSY          | Maximum Sustainable Yield  |
| NOM          | <i>Norma Oficial Mexicana</i>  |

|           |   |
|-----------|---|
| PCAC-LME  | Pacific Central American Coastal Large Marine Ecosystem                             |
| PI        | Performance Indicator   |
| REBIVI    | <i>Reserva Especial de la Biósfera del Vizcaino-SEMARNAT</i>                        |
| SAGARPA   | <i>Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación</i> |
| SCS       | Scientific Certification Systems  |
| SEMARNAT  | <i>Secretaría del Medio Ambiente y Recursos Naturales</i>                           |
| SEPESCA   | <i>Secretaría de Pesca</i>  |
| SG        | Scoring Guidepost   |
| SSB and R | Spawning Stock Biomass and Recruitment  |
| TAB       | Technical Advisory Board [of the MSC]   |
| TAC       | Total Allowable Catch   |
| UABCS     | <i>Universidad Autónoma de Baja California Sur</i>                                  |

## 1. INTRODUCTION

The Marine Stewardship Council (MSC) is a non-profit organization dedicated to the long-term protection or “sustainability” of marine fisheries and related habitats. First started as a joint initiative between Unilever and the World Wildlife Fund (WWF), the MSC is now a fully independent organization that is governed by an independent Board of Directors advised by a panel of scientific, economic, and fishery experts.

The MSC’s original mission statement promoted responsible, environmentally appropriate, socially beneficial, and economically viable fisheries practices, as well as the maintenance of biodiversity, productivity and ecological processes of the marine environment. The current MSC mission statement provides a slightly more focused mission and reads,

*“Our mission is to use our ecolabel and fishery certification programme to contribute to the health of the world’s oceans by recognising and rewarding sustainable fishing practices, influencing the choices people make when buying seafood, and working with our partners to transform the seafood market to a sustainable basis.”*

Dedicated to promoting “well-managed” or “sustainable” fisheries, the MSC initiative intends to identify such fisheries through means of independent third-party assessments and certification. Once certified, fisheries will be awarded the opportunity to utilize an MSC promoted eco-label to gain economic advantages in the marketplace. Through certification and eco-labeling, the MSC intends to promote and encourage better management of world fisheries, many of which have been suggested to suffer from poor management.

The Marine Stewardship Council developed the original standards for sustainable fisheries management in a three-step process: 1) Assemble a group of experts in Bagshot (UK) to draft an initial set of Principles and Criteria; 2) Conduct an 18-month process to review the standard in 8 major international venues; and 3) Convene a second set of experts in Warrenton, Virginia (Airlie Conference Center, USA) to revise and finalize the MSC Principles and Criteria.

The MSC Fisheries Certification Methodology used for this report, the Marine Stewardship Council Fisheries Assessment Methodology (FAM) and Guidance to Certification Bodies Including Default Assessment Tree and Risk-Based Framework Version 2.1 was issued on 1 May 2010.

## 2. SUMMARY

### 2.1. The Assessment Process

Scientific Certification Systems, Inc. conducted a pre-assessment of the California Spiny Lobster, as recommended by the MSC program. After review of the pre-assessment, the applicants for certification authorized the formal, full assessment of the fishery. The fishery was first certified in April 2004. Annual surveillance audits were conducted. The California Spiny Lobster fishery entered re-assessment in May 2009. All aspects of the assessment process have been carried out under the auspices of Scientific Certification Systems, Inc., an accredited MSC certification body, and in direct accordance with MSC requirements.

In order to ensure a thorough and robust assessment process, and a process in which all interested stakeholders could and would participate, SCS took the approach of allowing additional time as needed for both industry and stakeholders to respond to requests for information and participation.

To be thorough and transparent, SCS provided opportunities for input at all stages of the assessment process, whether required or not by MSC procedures. The general steps followed were:

- **Team Selection (2 November—12 November, 2009)**  
At this first step of the assessment process, SCS sought input from interested parties. SCS sent out an advisory through the MSC website and announced the selected team members on the 5<sup>th</sup> of November 2009. No comments were received regarding the team selection.
- **Setting Performance Indicators and Scoring Guideposts (5 November—5 December, 2009)**  
The assessment team evaluated the available documents and after some discussion, decided that there was sufficient evidence to use the MSC Default Assessment Tree v.2 (31 July, 2009) for the Performance Indicators and Scoring Guideposts. Use of the Default Assessment Tree was then announced on the MSC website. No public comments were received on the use of the assessment tree. The Default Assessment Tree version was updated in May 2010 to v.2.1. The most recent version includes copywrite text. No other changes were made.
- **Input on fishery performance (1 January—27 January, 2010)**  
SCS requested that the clients compile and submit written information to the assessment team illustrating the fishery's compliance with the required performance indicators. At the same time, SCS requested that stakeholders submit their views on the fishery management system's functions and performance. No comments were submitted from stakeholders regarding this fishery.
- **Meetings with industry, managers, and stakeholders (January 28-29 and March 16-17, 2010)**  
SCS planned for and conducted meetings with scientists and stakeholders on the 28<sup>th</sup> and 29<sup>th</sup> of January, 2010 in Ensenada, Mexico. It was at this meeting that the scope of the Unit of Certification was expanded. The new Unit included a tenth cooperative member, the artisanal red spiny lobster fishery of Isla Guadalupe. A second meeting was conducted the 16<sup>th</sup> and 17<sup>th</sup> of March, 2010 in La Paz, Mexico. Additional documents were requested and received between April and June 2010. Several stakeholders took part in the meeting in Ensenada on the 28<sup>th</sup> January 2010 (see Table 1 below for details). No negative comments about the fishery were received.
- **Scoring fishery (15 June, 2010)**  
The assessment team scored the fishery using the required MSC methodology and the default assessment tree of the FAM.
- **Drafting report (June-August, 2010)**  
Further documents were requested and received between June and August 2010 to support the rational and score for individual Performance Indicators. The assessment team drafted the report in accordance with MSC required process.
- **Selection of peer reviewers (August-September, 2010)**  
SCS, as required, released an announcement (10<sup>th</sup> September) of potential peer reviewers soliciting comment from stakeholders on the merit of the selected reviewers. Comments were received and taken into account for the final selection of the reviewers.
- **Release of Public Comment Draft Report (January 2011)**  
SCS releases this draft report for public comment, soliciting stakeholder response through posting on MSC website and direct email to known potential stakeholders. Comments were received and addressed by the team. All stakeholder comments and responses can be found in Appendix V.
- **Release of Final Report with Certification Decision (May 2011)**  
SCS releases the final report with the certification decision for a 15 day objection period. Stakeholders were informed through posting on the MSC website and direct email to known stakeholders. No notice of objection was received.
- **Release of the Public Certification Report (June 2011)**

## 2.2. Scoring Methodology

The MSC Principles and Criteria set out the requirements for a certified fishery. The certification methodology adopted by the MSC includes default performance indicators (PI) and scoring guideposts (SG) to make the process more efficient and transparent. In order for the fishery to achieve certification, an overall score of 80 is considered necessary for each of the three Principles, 100 represents surpassing of the performance necessary and 60 a measurable shortfall.

## 3. CERTIFICATION RECOMMENDATIONS AND PERFORMANCE SCORES

The fishery achieved a normalized score of 80 or above on each of the three MSC Principles independently (Principle 1 – 81.9, Principle 2 – 84.3, and Principle 3 – 90.6). Although the evaluation team found the fishery in overall compliance (a normalized score of 80 on each MSC Principle), it also found the fishery's performance on 5 indicators (1.2.4, 2.2.1, 2.2.2, 2.2.3, and 2.5.3) to be below the established compliance mark (an un-weighted score of 80 for a single indicator). Table 3 below shows the overall results of the evaluation.

**Table 3.** Performance Indicator & Principle Scores

| Principle                          | Wt (L1)                            | Component        | Wt (L2) | PI No.                | Performance Indicator (PI)    | Wt (L3) | Weight in Principle                    | Score | Principle Score |     |       |
|------------------------------------|------------------------------------|------------------|---------|-----------------------|-------------------------------|---------|--|-------|-----------------|-----|-------|
| One                                | 1                                  | Outcome          | 0.5     | 1.1.1                 | Stock status                  | 0.5     | 0.25                                   | 80    | 20.00           |     |       |
|                                    |                                    |                  |         | 1.1.2                 | Reference points              | 0.5     | 0.25                                   | 80    | 21.25           |     |       |
|                                    |                                    |                  |         | 1.1.3                 | Stock rebuilding              |         |  | NA    | NA              |     |       |
|                                    |                                    | Management       | 0.5     | 1.2.1                 | Harvest strategy              | 0.25    | 0.125                                  | 90    | 11.25           |     |       |
|                                    |                                    |                  |         | 1.2.2                 | Harvest control rules & tools | 0.25    | 0.125                                  | 90    | 11.25           |     |       |
|                                    |                                    |                  |         | 1.2.3                 | Information & monitoring      | 0.25    | 0.125                                  | 80    | 10.00           |     |       |
|                                    |                                    |                  |         | 1.2.4                 | Assessment of stock status    | 0.25    | 0.125                                  | 75    | 9.38            |     |       |
| Two                                | 1                                  | Retained species | 0.2     | 2.1.1                 | Outcome                       | 0.333   | 0.0667                                 | 100   | 6.67            |     |       |
|                                    |                                    |                  |         | 2.1.2                 | Management                    | 0.333   | 0.0667                                 | 100   | 6.67            |     |       |
|                                    |                                    |                  |         | 2.1.3                 | Information                   | 0.333   | 0.0667                                 | 100   | 6.67            |     |       |
|                                    |                                    | Bycatch          | 0.2     | 2.2.1                 | Outcome                       | 0.333   | 0.0667                                 | 70    | 4.67            |     |       |
|                                    |                                    |                  |         | 2.2.2                 | Management                    | 0.333   | 0.0667                                 | 70    | 4.67            |     |       |
|                                    |                                    |                  |         | 2.2.3                 | Information                   | 0.333   | 0.0667                                 | 70    | 4.67            |     |       |
|                                    |                                    | ETP species      | 0.2     | 2.3.1                 | Outcome                       | 0.333   | 0.0667                                 | 90    | 6.00            |     |       |
|                                    |                                    |                  |         | 2.3.2                 | Management                    | 0.333   | 0.0667                                 | 90    | 6.00            |     |       |
|                                    |                                    |                  |         | 2.3.3                 | Information                   | 0.333   | 0.0667                                 | 90    | 6.00            |     |       |
|                                    |                                    | Habitats         | 0.2     | 2.4.1                 | Outcome                       | 0.333   | 0.0667                                 | 95    | 6.33            |     |       |
|                                    |                                    |                  |         | 2.4.2                 | Management                    | 0.333   | 0.0667                                 | 80    | 5.33            |     |       |
|                                    |                                    |                  |         | 2.4.3                 | Information                   | 0.333   | 0.0667                                 | 80    | 5.33            |     |       |
|                                    |                                    | Ecosystem        | 0.2     | 2.5.1                 | Outcome                       | 0.333   | 0.0667                                 | 80    | 5.33            |     |       |
|                                    |                                    |                  |         | 2.5.2                 | Management                    | 0.333   | 0.0667                                 | 80    | 5.33            |     |       |
|                                    |                                    |                  |         | 2.5.3                 | Information                   | 0.333   | 0.0667                                 | 70    | 4.67            |     |       |
|                                    |                                    | Three            | 1       | Governance and policy | 0.5                           | 3.1.1   | Legal & customary framework            | 0.25  | 0.125           | 95  | 11.88 |
|                                    |                                    |                  |         |                       |                               | 3.1.2   | Consultation, roles & responsibilities | 0.25  | 0.125           | 85  | 10.63 |
|                                    |                                    |                  |         |                       |                               | 3.1.3   | Long term objectives                   | 0.25  | 0.125           | 100 | 12.50 |
| 3.1.4                              | Incentives for sustainable fishing |                  |         |                       |                               | 0.25    | 0.125                                  | 85    | 10.63           |     |       |
| Fishery specific management system | 0.5                                |                  |         | 3.2.1                 | Fishery specific objectives   | 0.2     | 0.1                                    | 90    | 9.00            |     |       |
|                                    |                                    |                  |         | 3.2.2                 | Decision making processes     | 0.2     | 0.1                                    | 100   | 10.00           |     |       |
|                                    |                                    |                  |         | 3.2.3                 | Compliance & enforcement      | 0.2     | 0.1                                    | 90    | 9.00            |     |       |
|                                    |                                    |                  |         | 3.2.4                 | Research plan                 | 0.2     | 0.1                                    | 90    | 9.00            |     |       |
|                                    |                                    |                  |         | 3.2.5                 | Management performance        | 0.2     | 0.1                                    | 80    | 8.00            |     |       |
|                                    |                                    |                  |         |                       |                               |         |  |       |                 |     |       |

|  |  |                        |
|--|--|------------------------|
|  | evaluation                                     |                        |
|  | <b>Overall weighted Principle-level scores</b> | <b>Principle Score</b> |
|  | Principle 1 - Target species                   | 81.9                   |
|  | Principle 2 - Ecosystem                        | 84.3                   |
|  | Principle 3 - Management                       | 90.6                   |

In the specific cases where performance indicators are scores below the established compliance mark, the MSC requires that the Certification Body set 'Conditions for Continued Certification' that when met bring the level of compliance for the select indicator up to the 80-level score.

### 3.1. Meeting Conditions for Continued Certification

To be awarded an MSC certificate for the fishery, the applicants must agree in written contract to develop an action plan for meeting the required 'Conditions'; a plan that must provide specific information on what actions will be taken, who will take the actions, and when the actions will be completed. The Action Plan must be approved by SCS as the certification body of record. The applicant must also agree in a written contract to be financially and technically responsible for surveillance visits by an MSC accredited certification body, which would occur at a minimum of once a year, or more often at the discretion of the certification body (based on the applicant's action plan or by previous findings by the certification body from annual surveillance audits or other sources of information). The contract must be in place prior to certification being awarded. Surveillance audits will be comprised in general of (1) checking on compliance with the agreed action plan for meeting pre-specified 'Conditions', and (2) sets of selected questions that allow the certifier to determine whether the fishery is being maintained at a level of performance similar to or better than the performance recognized during the initial assessment.

#### 3.1.1. General Conditions for Continued Certification

The general 'Conditions' set for the Federación Regional de Sociedades Cooperativas de la Industria Pesquera Baja California (Client) are:

- Client must recognize that MSC standards require regular monitoring inspections at least once a year, focusing on compliance with the 'Conditions' set forth in this report (as outlined below) and continued conformity with the standards of certification.
- Client must agree by contract to be responsible financially and technically for compliance with required surveillance audits by an accredited MSC certification body, and a contract must be signed and verified by SCS prior to certification being awarded.
- Client must recognize that MSC standards require a full re-evaluation for certification (as opposed to yearly monitoring for update purposes) every five years.
- Prior to receiving final certification, the Client shall develop an 'Action Plan for Meeting the Condition for Continued Certification' and have it approved by SCS.

#### 3.1.2. Specific Conditions for Continued Certification

In addition to the general requirements outlined above, Client must also agree in a written contract with an accredited MSC certification body to meet the specific conditions as described in Section 11 and summarized below (within the timelines that will be agreed in the ' Action Plan for Meeting the Condition for Continued Certification' to be approved by SCS).

Specific Conditions are:

1.2.4 There is an adequate assessment of the stock status.

Score 75

**Condition 1.2.4:**

By the first annual surveillance audit the client shall provide evidence that the stock assessment has been modified to be more appropriate for the stock. The client shall consider using a model that accurately represents the biology of the resources and which better represents the uncertainties in the parameters estimations and includes the Guadalupe Island fishery information. In addition provide some evidence to the CB that the stock assessment has been peer reviewed either internally or externally. By the second annual surveillance audit, provide some evidences that the post-release mortality of the sublegal size California spiny lobster has been estimated and incorporated in the assessment process.

2.2.1 The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups.

Score 70

**Condition 2.2.1:** By the second surveillance audit, the client shall provide details about the amount and origin of bait species used in the fishery. By the third annual surveillance provide some evidence to the CB that the bait species that are caught locally are highly likely to be within biologically based limits.

2.2.2 There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations.

Score 70

**Condition 2.2.2:** By the third surveillance audit, the client shall provide evidence that main bycatch species including bait species used in the fishery are highly likely to be within biologically based limits, or if outside such limits there develop a partial strategy of demonstrably effective mitigation measures and provide some evidence to the CB that the strategy has been implemented successfully.

2.2.3 Information on the nature and amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch.

Score 70

**Condition 2.2.3:** By the second surveillance audit, the client shall establish a scientifically defensible monitoring and reporting system for bycatch, including the amount and species that are used for bait, in the Baja California Spiny Lobster Fishery.

2.5.3 There is adequate knowledge of the impacts of the fishery on the ecosystem.

Score 70

**Condition 2.5.3:** By the second surveillance audit, provide information on the impact of the fishery on ecosystem components like the Cormorants taken as bycatch in the Baja California Spiny Lobster Fishery. This could include data from the reporting system for bycatch (see condition 2.2.3).

### **3.2. Certification Determination**

It is the consensus judgment of the assessment team and of the SCS Certification Determination Committee that the Baja California Lobster Fishery in Mexico complies with the MSC Principles and Criteria. Therefore, SCS as the certification body of record recommends that the fishery be issued an MSC Fishery certificate. The lead assessor for the assessment team presented all evidence to the SCS Certification Panel, which agreed with the assessment team's decision and authorized certification of the fishery. The client has submitted for approval, and SCS has approved, an Action Plan (See Section 12) for meeting all Conditions placed on the certificate.

## 4. BACKGROUND TO THE REPORT

### 4.1 Assessment Team/Authors

Dr. Oscar Sosa-Nishizaki, Principle 1, CICESE

Dr. Sosa-Nishizaki is a fisheries research scientist at Centro de Investigación Científica y de Educación Superior de Ensenada, Mexico (CICESE), where he teaches, at the graduate level, the Fisheries Ecology and Fish Population Dynamics courses, with 20 years experience. Dr. Sosa is the elected president of the Mexican Fisheries Society and Mexican Chapter of the American Fisheries Society, and member of the Mexican Academy of Sciences. Dr. Sosa has been member of national committees for the development of standard rules for the Elasmobranch fisheries and Sport fishing fisheries, and has participated in the assessment of large pelagic fisheries in Mexican waters. Dr. Sosa was one of the reviewers of the Baja California lobster fishery assessment report in the MSC initial certification and has been on assessment teams for several Mexican fisheries.

Dr. Sabine Daume, Team Leader and Principle 2, SCS

Dr. Daume is responsible for leading SCS's Sustainable Seafood Certification program, which includes both fishery and chain of custody certification under the auspices of the Marine Stewardship Council (MSC), using the MSC methodology and standards. Dr. Daume has been involved and/or led numerous pre- and full assessments. She is also a lead auditor certified to the ISO 9001:2008 standard. Dr. Daume is a marine biologist with special expertise in the biology and ecology of exploited marine resources. She has over 10 years experience working closely with the fishing and aquaculture industry in Australia. In her role as the Senior Research Scientist at the Department of Fisheries in Western Australia, she lead research projects related to fishery and fisheries habitats of temperate and tropical invertebrate species.

Dr. Daniel Lluch Belda, Principle 3, CICIMAR

Dr. Lluch is an internationally recognized fisheries scientist with more than 45 years experience in fisheries research and management. Dr. Lluch is a member of the Mexican Academy of Sciences; a professor at Instituto Politécnico Nacional, Centro Interdisciplinario de Ciencias Marinas, La Paz, Mexico; and acted as Regional coordinator of the PCAC-LME project, COI/IOCARIBE. Dr. Lluch has participated in and chaired a number of international scientific committees examining fisheries, oceanographic dynamics, and environmental effects in marine systems, including the Living Marine Resources Panel of the Global Ocean Observing System and the Working Group 98 of SCOR.

### 4.2 Peer Reviewers

An advisory was posted on the MSC website for a period greater than 10 days advising stakeholders that comments were welcomed and would be considered in the final selection of the peer reviewers. Comments were received and taken into account for the final selection of peer reviewer (see Appendix IV). Two peer reviewers were selected from a list of revised nominations to conduct the review of this report.

**Dr. Bruce Phillips** - Curtin University, Perth, Western Australia

Dr. Phillips is an internationally recognized expert on the recruitment and sustainability of lobsters. Bruce has a special interest in sustainability and certification of fisheries and has coauthored two books on this subject. Bruce has experience as an Assessment Team member for the West Australia Rock Lobster and as a member of the original assessment for this fishery in 2000.

**Dr. David Armstrong** - School of Aquatic and Fishery Sciences, University of Washington

Dr. Armstrong's research has been focused on crab and other shellfish life history and ecology from the Bering Sea through central California.

In accordance with MSC Fisheries Certification Methodology v.6, the comments from the peer reviewers are un-attributed. The comments and the assessment team responses are presented in Appendix V.

### 4.3 Summary of Previous Certification

The spiny lobster fishery (*Panulirus interruptus*) in Baja California, Mexico was first certified in 2004 and became the first small-scale, community based fishery certified under the MSC standard. Three Conditions were placed on the fishery for Continued Certification, all related to Principle 3. All three conditions were closed out at the time of the 4<sup>th</sup> annual surveillance audit. The most significant developments were the new general law - LEY GENERAL DE PESCA Y ACUACULTURA SUSTENTABLES – which requires that issues regarding the ecological risks in a fishery be taken into account during the development of fishery-specific management plans. The fishery management plan is currently in its final draft and is under public consultation (see section 5). The research conducted by Stanford University, a Ph.D. study by Geoff Shester in conjunction with the management authorities in Baja California was completed (as mentioned above). The research addressed data gaps and provided valuable information regarding habitat impacts of lobster traps amount and composition of bycatch as well as bait used in the fishery as well as estimates on ghost fishing mortality caused by lost traps.

### 4.4 Summary of Meetings

The sites and people chosen for visits and interviews were based on the assessment team's need to acquire information about the management operations of the fisheries under evaluation. Agencies and their respective personnel responsible for fishery management, fisheries research, fisheries compliance, and habitat protection were identified and contacted with the assistance of the client group and stakeholders.

The assessment team met with managers and scientists on two occasions, 28-29 January, 2010 and 16-17 March, 2010. As with all assessments, there are always a number of issues that come to light when reviewing all the information with critical management and scientific personnel. Questions that arose after the both meetings were handled through email and phone calls with the client and any other necessary entities.

**Table 1.** Assessment Meetings & Attendees

|   |  |  |
|---|--|--|
| <b>28 January 2010</b><br><b>Ensenada,</b><br><b>Mexico</b> | ▪ <b>Client representative</b>               | Mario Ramade, FEDECOOP; Fatima Medina  |
|   | ▪ <b>Stakeholders</b>                        | Leonardo Vazquez Vera, COBI; Dr Alfonso Aguirre Muñoz, Conservacion Islas                                      |
|   | ▪ <b>MSC</b>                                 | Jim Humphreys  |
| <b>29 January 2010</b><br><b>Ensenada,</b><br><b>Mexico</b> | ▪ <b>Client representative</b>               | Mario Ramade, FEDECOOP   |
|   | ▪ <b>Stock Status &amp; Harvest Strategy</b> | Fidelia Caballero/ Julian Castro, INAPESCA   |
|   | ▪ <b>Ecosystem</b>                           | Celerino Montes, M.I. Mezo Bace, Nadia Citlali Olivares  |
|   | ▪ <b>Management</b>                          | Banuelos, CONANP   |
|   | ▪ <b>Stakeholders/ Fishermen</b>             | Jesus Gallo/ Indra Montiel, CONAPESCA<br>Alfredo Marin Duran, Juan N. Morillo, SEPESCA<br>Edgar Aguilar, COOP, |
| ▪ <b>MSC</b>  | Jim Humphreys                                |  |
| <b>1 February 2010</b><br><b>Conference Call</b>            | ▪ <b>Ecosystem</b>                           | Dr Fiorenza Michelli, Stanford University  |
|   | ▪  | Dr Geoff Chester   |
| <b>16 March 2010</b><br><b>La Paz, Mexico</b>               | ▪ <b>Client representative</b>               | Mario Ramade, FEDECOOP   |

|   |  |   |
|---|--|---|
|   | <ul style="list-style-type: none"> <li>▪ <b>Stock Status &amp; Harvest Strategy</b></li> <li>▪ <b>Ecosystem</b></li> </ul> | Armando Vega, Laura Cynthia Zoniga Pacheco, E. Treuinu Gracia, Pedro Sierra Rodriguez, CRIP/ INAPESCA, Ricardo Perez Enriquez, CIBNOR<br>Dr Salvador Lluch Cota, CIBNOR; Benito Bermudez, CONANP, Margarita Casas Valdez, Francisco Garcia Rodriguez, CICIMAR; Elisa Seviere Zaragoza, CIBNOR |
|   | <ul style="list-style-type: none"> <li>▪ <b>Management</b></li> </ul>  | Dr German Ponce, CICIMAR,   |
| <b>17 March 2010<br/>La Paz, Mexico</b> | <ul style="list-style-type: none"> <li>▪ <b>Ecosystem</b></li> </ul>   | Dr Salvador Lluch Cota, CIBNOR;<br>Dr Fiorenza Michelli, Stanford University  |

#### 4.5 Submission of Data on the Fishery

One of the most significant, and difficult, aspects of the MSC certification process is ensuring that the assessment team gets a complete and thorough grounding in all aspects of the fishery under evaluation. In even the smallest fishery, this is no easy task as the assessment team typically needs information that is fully supported by documentation in all areas of the fishery from the status of stocks, to ecosystem impacts, through management processes and procedures.

Under the MSC program, it is the responsibility of the applying organizations or individuals to provide the information required proving the fishery or fisheries comply with the MSC standards. It is also the responsibility of the applicants to ensure that the assessment team has access to any and all scientists, managers, and fishers that the assessment team identifies as necessary to interview in its effort to properly understand the functions associated with the management of the fishery. Last, it is the responsibility of the assessment team to make contact with stakeholders that are known to be interested, or actively engaged in issues associated with fisheries in the same geographic location.

## 5. CALIFORNIA SPINY LOBSTER FISHERY IN MEXICO

A brief description of the California Red Spiny Lobster fishery assessed in this project is provided in the following subsections.

### 5.1 Unit of Certification

The fishery under assessment is the California Spiny Lobster (*Panulirus interruptus*) fishery of Baja California, located on the northern Mexican Pacific Coast. In Baja California, 26 fishing cooperatives exploit *P. interruptus*, of these 10 are covered under the unit of certification (Table 2). The legal exploitable area for the ten cooperative group members covers approximately 2,400 km<sup>2</sup> along the coast of Mexico. This area extends from Cedros Island in Baja California (28.6°N 115.5°W) through Punta Abreojos in Baja California Sur (26.6°N 113.2°W) and includes Isla Guadalupe approximately 250 km off the coast of Baja California, Mexico (29.03°N 118.27°W) (**Figure 1**).

The 10 cooperatives operating in the central region of the Peninsula catch approximately 80% of the total catch of this species. Details of the number of members, boats and traps are given in **Table 2**.

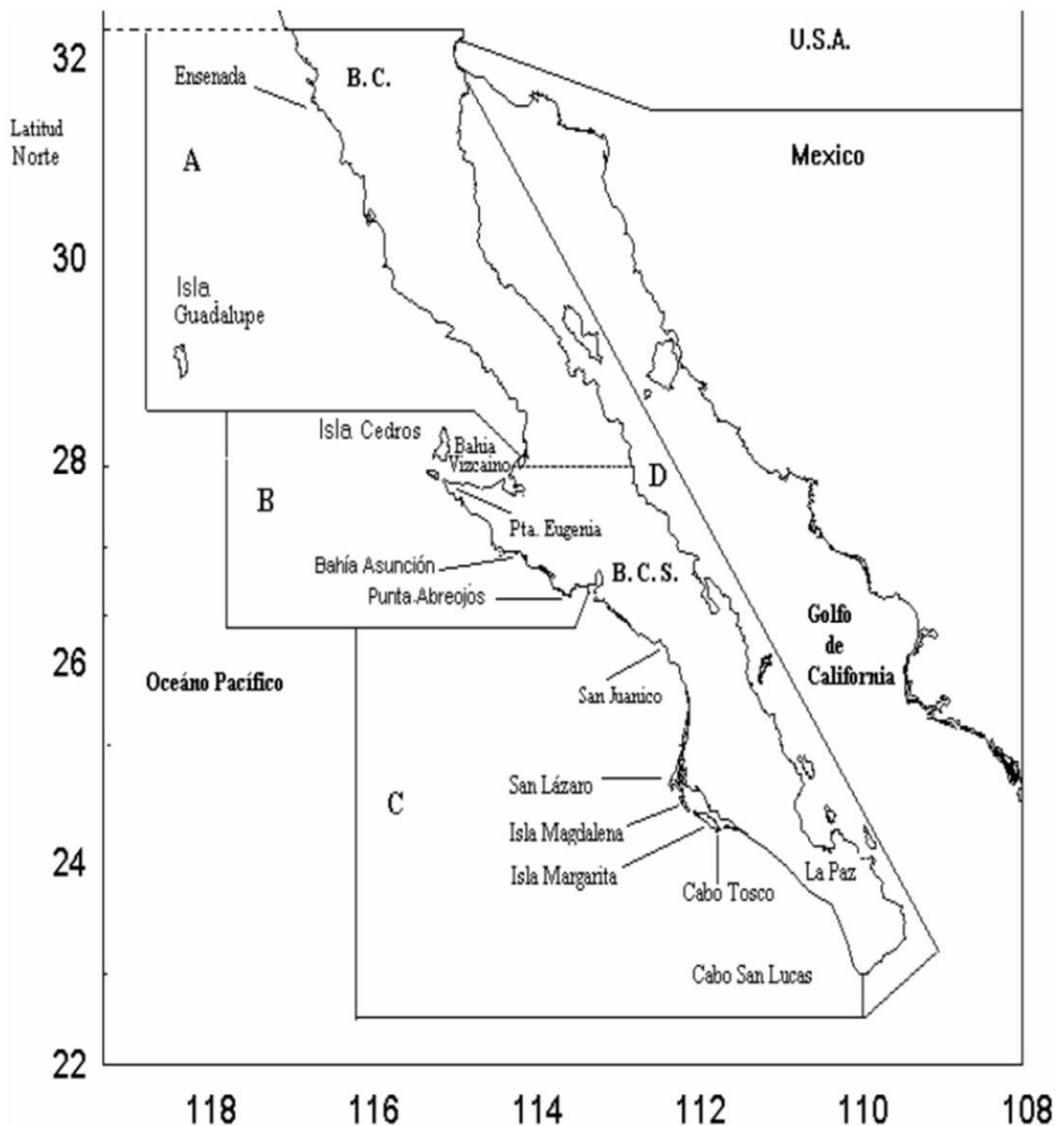


Figure 1. Four fishing zones (A-D) in Baja California, Mexico (Vega et al. 2010).

Table 2. Number of members, boats and traps in each of the 10 fishing cooperatives during the 2009/10 fishing season (Ramade, V.M. 2010).

| COOPERATIVES                           | Members      | Boats      | Traps         |
|--|--------------|------------|---------------|
| <b>Abuloneros y Langosteros</b>        | 22           | 9          | 320           |
| <b>Pescadores Nacionales de Abulon</b> | 150          | 27         | 2,040         |
| <b>Buzos y Pescadores</b>              | 80           | 19         | 1,235         |
| <b>La Purisma</b>                      | 94           | 27         | 2,160         |
| <b>Bahia Tortugas</b>                  | 92           | 22         | 1,320         |
| <b>Emancipacion</b>                    | 84           | 22         | 1,320         |
| <b>California de San Ignacio</b>       | 134          | 21         | 840           |
| <b>Leyes de Reforma</b>                | 170          | 20         | 1,000         |
| <b>Progreso</b>                        | 180          | 25         | 2,800         |
| <b>Punta Abreojos</b>                  | 168          | 40         | 2,600         |
| <b>TOTAL</b>                           | <b>1,174</b> | <b>232</b> | <b>15,635</b> |

## 5.2 Target Species and Life History

*Panulirus interruptus* (Randal, 1840) occurs in rocky areas from the low intertidal zone to depths of around 100 m. Females have one brood per year. Females breed earlier in the northern areas (June), than in the central (July) and southern parts (August) of Baja California (Vega et al. 1991). Fecundity also follows a latitudinal trend, with females producing fewer eggs per brood in the north than in the south of the peninsula (Pineda and Diaz 1981). Breeding and hatching occur in shallow areas (< 20 m), into which adults move in the spring. Lobsters return to deeper waters in the autumn (Ayala et al. 1988).

Spiny lobster eggs hatch into tiny, transparent larvae known as phyllosomas that go through 11 molts during an estimated period of 7.75 months (Johnson, 1960). After this period, the phyllosoma transform into the puerulus and then the juvenile stage (Booth and Phillips, 1994). In Bahía Tortugas, Baja California Sur, pueruli settled on artificial collectors most of the year, but with a major peak in autumn (September-October) and a minor peak in spring (March-June) (Guzman *et al.* 1996). Recently settled pueruli and small juveniles commonly inhabit rocky habitats which have dense plant cover, particularly the surf grass *Phyllospadix torreyi*, at depths of 0-4m. A study has shown that juvenile California spiny lobsters have a strong preference for *Phyllospadix* sp. (Castaneda-Fernandez de Lara, V *et al.* 2005a). Juveniles and sub-adults are highly gregarious. Juvenile lobsters usually spend their first two years in the nearshore surf grass beds. Sub-adults have also been found in shallow rocky crevices and mussels beds. Adult lobsters are found in rocky habitats, but will also search sandy habitats for food (Barsky, 2001).

In order to grow, a lobster forms a new soft shell under the older smaller hard exoskeleton. During the process of molting, the old exoskeleton is shed to reveal the new larger one (Barsky, 2001). Growth studies on *P. interruptus* in Mexico have been performed using a number of methods (Vega, 2006). Age at sexual maturity (65 mm CL) is estimated to be 3 years for males and 5 for females, but other estimates are 4.5 and 6 years, respectively. Similarly, age of males and females at minimum legal size (82.5 mm CL) was estimated at both 4 and 7 years as well as 6.5 and 8.5 years.

Adult lobsters are omnivorous and consume algae, snails, mussels, sea urchins, clams and fish. Cannibalism has been reported on injured or newly molted lobsters (Barsky, 2001). Lobster are prey for sheephead, cabezon, kelp bass, octopuses, California moray eels, horn sharks, leopard sharks, rockfishes and giant sea bass (Barsky, 2001).

### 5.3 Distribution

The California Spiny Lobster (*Panulirus interruptus*) is a temperate to subtropical species, distributed from Southern California (USA) south to the Baja California Peninsula tip in Mexico. The most frequently used common name is California spiny lobster, also used by FAO (Holthuis, 1991), but other common names such as the California lobster and red lobster are used locally. In Mexico, the species is known as *Langosta Roja* (Vega, 2006). Small populations of the species may also be found in the Gulf of California between the Bay of Angels and Cape Virgins. Based on a mitochondrial DNA analysis of the California spiny lobster along the Pacific coast of Baja California, García-Rodríguez and Perez-Enriquez (2006) did not find any genetic differences in the population, suggesting that there is a single population in the north Eastern Pacific. The notion that there is a single population has been also suggested based on the larval distribution (Johnson, 1960; Pringle, 1986) and adult abundances (Vega, 2006) with a center of the population in the central part of the peninsula.

Based on the population abundance of the species, four fishing areas have been identified in Baja California (**Figure 1**). These areas are used in the analysis and evaluation of the fishery as well as for its management. The northern zone covers the area from the border to the Lat. 28 N and includes the Islands Todos Santos, Jerome, Guadalupe, San Martín and Adelaide. The California Spiny Lobster population is concentrated in the Central zone, which includes the Cedros Islands, St. Benedict, CB Island Nativity, San Roque, Asunción, the coastal platform from Vizcaino Bay, including the lagoon Hare's eye and the North Punta Laguna San Ignacio. The southern zone ranges from Laguna San Ignacio to Cabo San Lucas. The fourth zone encompasses populations in the Gulf of California, the east coast from Bay of the Angeles, San José of Cabo to Cabo San Lucas and the adjacent islands. Small populations of the species can be found in this zone, but abundances are unknown.

### 5.4 Geographic Setting of the Fishery

The history of the *Panulirus interruptus* fishery in Baja California has been described in details by Ayala et al. (1988), Vega & Lluch-Cota (1992), and Vega et al. (1996). Also known as red lobster or California lobster, *P. interruptus* is fished commercially in from the US border south to Margarita Island, Mexico. The greatest density of the stock is distributed between Cedros Island and Punta Abreojos in Mexico between 28.6°N 115.5° W to 26.6°N 113.2° W (central zone **Figure 1**). Most of this area is part of the Vizcaíno Biosphere Reserve, except Cedros Island, and is within a 5 km band along the shore.

Small numbers (less than 1% of the catch) of *Panulirus inflatus* are also caught in the fishery, but this species is not considered in this assessment. The *P. inflatus* are predominantly caught in the southern most part of the central zone. Two of the ten cooperatives in the Federation are known to catch *P. interruptus*. *P. interruptus* is also fished both commercially and recreationally in California, USA.

### 5.5 Background of the California Spiny Lobster Fishery in Mexico

Fishing rights were first exclusively allocated to fishermen's Cooperatives in 1936/1938, by assigning a group of species (lobster, abalone and others) within a delimited fishing territory for each organization (Vega et al. 1997). A unique scheme of limited entry originated from this system, which allows for control of effort and adherence to basic regulations (Vega et al. 1997; Vega et al. 2000).

## 6. FISHERY AND MANAGEMENT SYSTEM

### 6.1 Evolution of the fishery

The management of the different lobster fisheries exploited in Mexican waters is regulated by decree in the Mexican Official Norm (NORM-006-PESC-1993). This encompasses the management regulations for the species in the Mexican Caribbean and Gulf of Mexico as well as those in the Baja California Peninsula and the Gulf of California.

Regulations result from a coordinated effort from all stakeholders to discuss issues and concerns at the state level. Local personnel from the Regional Center of Fisheries Research (CRIP) of the National Institute of Fisheries (INAPESCA) pass along comments to the INAPESCA headquarters, which in turn puts forth final recommendations to CONAPESCA (National Commission for Fisheries and Aquaculture).

Fishing regulations remained basically unchanged between 1960 and 1990. Since then, regulations have undergone a number of modifications. The main regulations still include a closed season, a minimum legal size (MLS), and a prohibition on the catching of egg-bearing females. In addition, there are restrictions on fishing gear and concession of fishing rights in specific areas or zones.

Until 1993, fishing closures for *P. interruptus* were the same throughout the western coast of the Baja California Peninsula. Since then, established latitudinal variations in the reproductive cycle of *P. interruptus* along the coast allow the fishery to be managed through stepped closures in the four zones (**Figure 1**). The MLS of *P. interruptus*, is set at 82.5 mm carapace length (CL) throughout the fishery.

Trends in catch (metric tons t) and effort (number of traps hauled) of the fishery from the central fishing area are shown in Figure 2. In the 1960-61 fishing season, 400 t were caught. Catches increased to and remained between approximately 1,000 to 1,500 t during the 1970-80's. A maximum of 1,624 t was caught in the 2000-2001 season, and stabilized to approximately 1,400 t in the last five seasons (2005-2010). Effort has a different trend. Effort consistently increased from the 1960-61 season to the 1985-86 season from 800,000 to 2,500,000 trap-hauls respectively and decreased during the 1990's to around 2,200,000 trap-hauls.

also increasing to 2,300,000 trap-hauls in the 2009-2010 season (**Figure 2** the catch and effort from Isla Guadalupe is not included in this figure.)

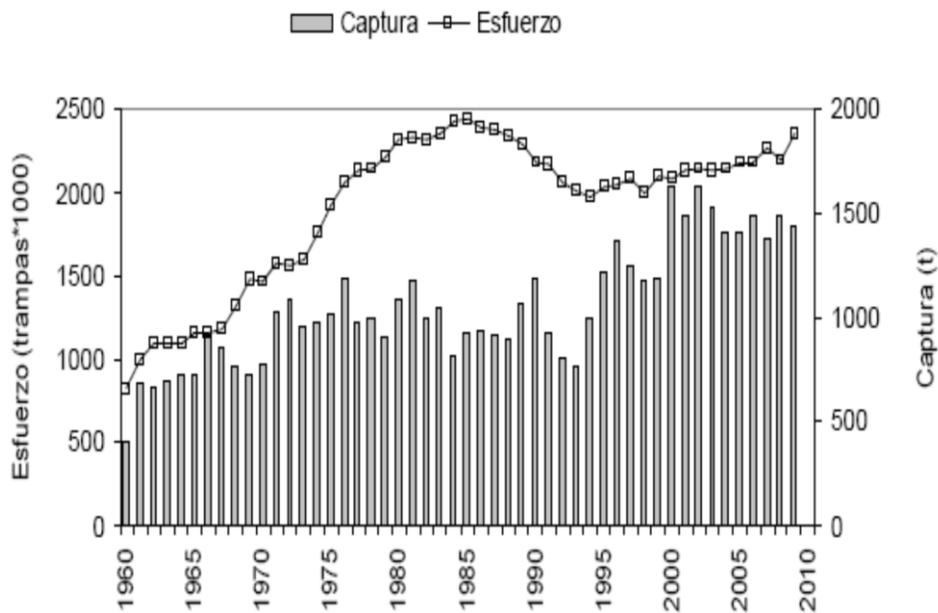


Figure 2. California spiny lobster effort (“Esfuerzo” or number of trap-hauls, line) and catch (“Captura” in metric tons, bars) from the central fishing area of Baja California (from Vega *et al.* 2010).

## 6.2 Management system

The lobster fishery is managed under the overarching “*Ley general de pesca y acuacultura sustentables/General Law for sustainable fishing and aquaculture*” (LGPAS 2007). Also included is a “*Reglamento de la ley*” (Regulations of the law) decreed by the President of the Republic. The Comisión Nacional de Pesca y Acuacultura (CONAPESCA, the National Commission for Fisheries and Aquaculture) is the executive branch of the Federal Government that is the most involved in fisheries regulations.

Another general law relevant for fisheries is the “*Ley General del Equilibrio Ecológico y la Protección del Ambiente/General law for the ecological equilibrium and the protection to environment*” (LGEEPA

1988). This is particularly relevant because most of the fishery takes place within coastal areas of the “*Reserva de la Biosfera del Vizcaino*” (Vizcaino biosphere reserve) and the “*Reserva de la Biosfera de Isla de Guadalupe*” (Guadalupe Island biosphere reserve). Both are legal natural reserves. The “*Secretaría del Medio Ambiente y Recursos Naturales*” (SEMARNAT, the Secretariat for Environment and Natural Resources) is the highest executive branch for general law, while the “*Comisión Nacional de Áreas Naturales Protegidas*” (CONANP, National Commission for Natural Protected Areas) relates specifically to natural reserves.

As with all marine activities, the fishery is also regulated by the “*Ley de Navegación*” (The merchant marine law) for the licensing of boats.

The “*Ley Federal Sobre Metrología y Normalización*” (LFMN, Federal Law on Metrology and Standardization) establishes the procedures for the integration of the “*Normas Oficiales Mexicanas*” (NOMs, Official Mexican Norms), which are specific legal guidelines; NOM-PESC-006-1993 relates to lobster fishing. Furthermore, the CONAPESCA regularly updates the “*Carta Nacional Pesquera*” (CNP, National Fisheries Charter), that contains specific provisions for the management of the fishery.

There are three main mechanisms for the specific management of the lobster fishery: 1) limited access rights, given through concessions or permits, which define limitations of fishing areas and limit the number of boats and traps being proposed by the fishing coops in their mandatory annual programs; 2) regulatory measures protecting reproduction and recruitment, such as minimum size limits, area and temporal closures, protection to ovigerous females and escape windows in traps, and 3) mechanisms of coordination and co-management, facilitating the coordination between fishers and technical personnel of INAPESCA starting from the collection of data to discussion of research results, where recommendations for management are openly and transparently discussed before their submission to fisheries authorities. One of mechanisms used in coordination and co-management is the “*Comité Técnico Consultivo de la Pesquería de Langosta del Pacífico*” (Technical consulting committee for the Pacific lobster fishery). Created during 1988, the committee annually organizes the “*Taller Anual de Langosta*” (Annual lobster workshop). There is also a “*Subcomité Estatal de Langosta de Baja California Sur*” (Baja California Sur state lobster subcommittee), operating since 2003, within the framework of the “*Consejo Estatal de Pesca y Acuacultura*” (State council for fisheries and aquaculture).

### **6.3 Stock assessment and References Points**

During the last ten years, the fishery has been assessed by personal from the INAPESCA using several models (Vega *et al.* 2000; Vega, 2003; Vega, 2006). In 2000, Vega *et al.* (2000) assessed the fishery applying a modified version of a Biomass Dynamic Model (Hilborn and Walters, 1992) that incorporated environmental variability through the use of sea surface temperature anomalies, using the 1971-72 to 1996-97 catch and effort time series (Sierra *et al.* 1997). Also, Vega *et al.* (2003) used a model with Lagged Recruitment, Survival and Growth (LRSG, Hilborn and Mangel, 1997) which is a more flexible model that incorporates alternative life history characteristics. The LRSG model is appropriate for commercial species like California spiny lobster because recruitment events of a particular year for this species have been correlated with the catch 5 years later (Arteaga-Ríos *et al.* 2007).

During the Vega *et al.* (2000) assessment, INAPESCA decided to set reference points at MSY (incorporating biomass, fishing mortality, effort and rate of exploitation) using the Biomass Dynamic Model, particularly for biomass maximum sustainable yield ( $B_{MSY}$ ). Since 2000, the official research institution established that management decisions will be taken depending on the relationship of current biomass ( $B$ ) with the  $B_{MSY}$  by looking at the ratio of one to the other ( $B/B_{MSY}$ ), where a stock with a value  $<1$  of  $B/B_{MSY}$  will be considered under its optimum level, while a fishery with a value of  $>1$  will be considered over its optimum, or if  $=1$  the fishery will be in optimum level (Arenas-Fuentes y Díaz de León, 2000). In Vega (2003) and Vega (2006), the Biomass Dynamic Model as well as other models were used in order to provide more robust advice to

management. The 2003 and 2006 assessments used the analytical models of Leslie-Delury modified by Restrepo (1998), a length based Virtual Populations Analysis (Jones, 1984), and a Thompson and Bell predictive model (Vega, 2006). Vega (2006) also applied a bio-economical model to take into consideration the economical value of the fishery. In the latest analysis, Vega *et al.* (2010) used only the Biomass Dynamic Model (Hilborn and Walters, 1992) and utilized the catch and effort time series from 1960-61 to the 2009-10 seasons. They found that current biomass (B, 14,120 t) in the last five seasons compared with  $B_{MSY}$  (9,402 t) is 1.5 larger, meaning that the stock is over its optimum level.. Vega *et al.* (2010) also found that Fishing Mortality (F) was 0.10, half the  $F_{MSY}$  (0.20). Effort (f), has been 2,218,377 trap-hauls. This is 38% of the  $f_{MSY}$  (5,785,700 trap-hauls). Though the biomass, catch and effort values have been within the MSY parameters, Vega *et al.* (2010) recommended that effort should *not* be increased due to economical reasons based on the Maximum Economical Yield analysis results from a previous assessment (Vega, 2006).

#### **6.4 Harvest Strategies and Tactics**

The fishery harvest strategy is based on all governmental specifications for the fishery as stated in Regulations, Guidelines (NOMs) and specific provisions as mentioned in section 5.2. Recently, these strategies have been considered and included in a Management Plan. Also, the Management Plan, developed by the INAPESCA, includes a scientific research plan. The draft of the Management Plan was still up for public comment at the time of this report. Its publication and enforcement should be implemented in the near future.

In addition to the Management Plan, the individual Fishing Cooperatives within the Unit of Certification have different harvest strategies and tactics to reach their goals of maximizing the social benefit of the fishery. Each harvest strategy within the Federation of Cooperatives is based on sustainable practice principles utilizing co-management. This section is based on the document presented by Ramade (2010) to the assessment team.

Fishing effort is regulated inside the Cooperatives in order to accomplish the requisite of the Annual Harvesting Program for the following year, which is submitted annually every October to CONAPESCA, in order to support and continue the concession of the fishing area. In order to determine the fishers that will participate the next fishing season, the production from the last 5 fishing seasons for each captain and his crew (one or two members) is analyzed. All fishermen have to be members of the Cooperative and have to show a positive level of production in order to continue their participation. The harvesting level for the following season is planed based on the analysis of the last 5 fishing seasons. The harvest level is based on the recommendations from INAPESCA which takes into account the stock size, biological and economical indicators. These are discussed in assessment workshops or Lobster Fishery Subcommittee meetings and CONAPESCA if there will be any change in regulations. The necessary adjustments or changes in the harvest strategy are discussed and agreed upon during a Cooperative Members meeting, where the fishers, vessels and number of traps for the following season are established. These are stated in the Annual Harvesting Plan. Cooperative Meetings are regulated by their own internal laws that are recognized as having legal value by official authorities.

Due to the high value of the lobster fishery<sup>1</sup>, and in order to maintain the stock size and the conservation of the resource, the cooperatives developed an inspection and surveillance system inside their fishing area to eliminate illegal fishing. This system represents a high cost of around \$ 2.5 million dollars per year to the 10 cooperatives together, for operation and an investment cost of around \$ 1.5 million dollars for communication equipment, vehicles, boats, etc. The system is legally recognized as a Community Surveillance Committee. Its implementation has had positive results minimizing illegal fishing along the central region. The Surveillance Committee also participates in the enforcement of the legal minimal size by double checking catch with the Quality Control group of the Cooperatives during the landing process. In the case of deception by a fisher member, economic sanctions or fishing activity suspensions could be applied including the potential exclusion of membership from the cooperative.

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<sup>1</sup> <http://www.langostadelpacifico.com/sitio/inicio/eng>

In accordance with the NOM-06-PESCA-1993, each Cooperative inside their operative structure has established a Fisheries Department which allows for the observation of the fishery and fishery records information. This fulfils the obligation to support and participate in any research conducted by INAPESCA. Based on the yearly Lobster Fishery Committee meetings and workshops, several monitoring programs are carried out: 1) a monitoring program for recording the monthly catch and effort information; 2) a monthly sampling program of the size and sex structure of all catch from one fishing vessel during the season; 3) a monthly sampling program for the size and sex structure of a proportion of all commercial catch; and 4) a monitoring sampling program that analyzes the reproductive stages of lobster during the closed season. Market prices are monitored during the fishing season in order to evaluate the economical operation feasibility and to assess the production costs against the potential earnings when making decisions on an early closure for the season to avoid low economical gains. This occurred during the 2008-09 season when the fishing season was closed 10 days earlier than planned.

## 7. FISHERY'S IMPACT ON ECOSYSTEM

### 7.1 Ecosystem

The west coast of Baja California, Mexico is a highly variable ecosystem that transitions from cold upwelling areas in the north to a subtropical ecosystem in the south. The area is characterized by high productivity compared to areas in southern California with an estimated biomass at MSY of 15,000t of lobster per year (Vega, 2006). In the central zone, where most of the California Spiny Lobster Fishery is based, there are two important upwelling systems: Punta Eugenia and Punta Abreojos. The upwelling persists throughout the year but is most intense in March through June (Bakun and Nelson 1977). Kelp forest communities dominated by *Macrocystis pyrifera*, *Laminaria farlowii*, and *Pterygophora* spp. are characteristic of the cold water upwelling areas in the north with decreasing species diversity in southern latitudes. Sea urchins (*Strongylocentrotus purpureus*, *S. franciscanus*) and abalone (*Haliotis rufescens*, *H. fulgens*, *H. cracherodii*) are typical herbivores that feed on the kelp and together with lobster inhabit the kelp forests. The biomass of both abalone and lobster do not differ much between the areas. The species composition and diversity of other species, however, changes from the north to the south. A large number of fish species such as kelp bass (*Paralabrax clathratus*), mackerel (*Trachurus symmetricus*), and yellowtail (*Seriola lalandii*) are associated with kelp. Carnivores include the common dolphin (*Delphinus capensis*) and bottlenose dolphins (*Turniops truncatus*) as well as other marine mammals like humpback whales (*Megaptera novaengliae*), grey whales (*Eschrichtius robustus*), Pacific Harbor Seals (*Phoca vitulina*) and Californian sea lions (*Zalophus californianus*).

Biological changes that occur during the El Niño Southern Oscillation (ENSO) events are related to reduced upwelling, lower inshore nutrients (Lynn et al. 1995) and delayed phytoplankton blooms (Lenarz et al. 1995). It is postulated that because large-scale environmental changes in the Californian current ecosystem have such a large effect on the ecology of the region, other natural processes, such as competition and predation, may not be as important in shaping the abundance and composition of the communities in the region, as environmental factors (Chelton et al. 1982).

Part of the spiny lobster fishery is conducted in the Vizcaino Biosphere Reserve and the Guadalupe Island Biosphere Reserve. The Vizcaino Biosphere Reserve is the largest in the world, made up of over 6.5 million acres of islands, deserts, and coniferous forests. Gray whales (*Eschrichtius robustus*) reproduce and hibernate in the reserves. Wildlife such as the lynx, puma, red-tail falcon, and white pelican also reside in the unique area. The Guadalupe Island Biosphere Reserve was one of the first protected areas in Mexico. This 62,500-acre island in the Pacific Ocean is a prime refuge to sea lions (*Zalophus californianus*) and harbor seals (*Phoca vitulina*). It is also the breeding ground of the Guadalupe fur seal (*Arctocephalus townsendi*). In 1975, the government of Mexico declared Guadalupe Island a pinniped sanctuary. Both reserves are protected through the “*Ley General del Equilibrio Ecológico y la Protección del Ambiente/General law for the ecological equilibrium and the protection to environment*” (see management system section 5.2 above).

## 7.2 Bycatch - Retained and discard species

In an MSC assessment, “bycatch” consists of the incidental catch of all non-target species. The bycatch is further categorized as those that are non-target but are “retained” vs. “discarded” bycatch. In an MSC assessment bait used in the fishery, if caught by the same fishermen or bought from other sources, is considered “bycatch” (FAM v2, 2009). Species that are not caught in the fishery, but are used as bait or species that may be affected indirectly by the fishery are also considered and discussed in Principle 2 Performance Indicator rationals for “bycatch species.”

Recently, a study conducted at Stanford University by Dr. Fiorenza Michelli (Principle Investigator) and funded by the United States National Science Foundation (Linking Human and Biophysical Processes in Coastal Marine Ecosystems of Baja California OCE 0410439) was finalized. The study also includes part of a Ph.D. study conducted by Geoff Shester that was initiated to fill some data gaps encountered during the first MSC certification of this fishery. The studies provided estimates on the amount and composition of retained and discarded bycatch as well as bait used in the fishery. The study related to bycatch was conducted in the Punta Abreojos and Bahia Tortugas cooperatives (2 out of 10 cooperatives) within the Vizcaino Desert Biosphere Reserve in the north Pacific region of Baja California Sur, Mexico. Bycatch rates were moderately low for most species (Shester 2008). The total incidental (non-target) catch was approximately 13% of landed lobster catch by weight. The main non-target bycatch in lobster traps were other crabs, octopus and gastropods (e.g. Top shell (*Astraea undosa*), Crabs (*Cancer* spp.), Octopus spp., 63%). Fin fishes (e.g. kelp bass (*Paralabrax clathratus*), sheephead (*Semicossyphus pulcher*), white fish (*Caulolatilus princeps*), rock fishes (*Sebastes* spp.), giant sea bass (*Stereolepis gigas*) – 20%), and some small sharks and rays (e.g. horn shark (*Heterodontus francisci*)– 8%). The author noted that due to their pivotal role as top predators in the ecosystem, the most ecologically significant non-retained bycatch in this fishery are cormorants (*Phalacrocorax* spp.) (8%). It is not known, however, if the 8% incidence of cormorants is representative for the fishery as a whole or if it is specific to the study area.

Bait species are of particular importance in this assessment and are in accordance to the guidance 7.2.7 of the MSC Fisheries Assessment Methodology (FAM v 2, 2009) discussed in detail in the scoring rationale of Performance Indicators 2.2.1, 2.2.2 and 2.2.3 (see below). Lobster traps are baited each time they are checked. The daily biomass of bait exceeds the lobster catch throughout the fishery. Approximately 2.3 to 3.5 kg of bait is used per kg of landed lobster catch, which is equal to a total use of 4,500 to 5,000 t of bait for the area of assessment per season (M. Ramade pers. com). At present, bait is restricted to oily fish such as sardines, mackerel and bonito. The mackerel and sardines are usually purchased from Ensenada, Mexico (see invoice samples in Appendix 1). An exception, for example, occurred in Bahia Tortugas where 1/3 of the bait were mixed finfish species that were caught locally (Shester, 2008). This is likely to vary between areas and time in the fishing season. Species that are caught locally for bait include barred sand bass (*Paralabrax nebulifer*) and ocean whitefish (*Caulolatilus princeps*). There are concerns that there is no enforcement in terms of adhering to specific size limits for these species. Other bait species may not be managed at all. Further studies are needed to monitor the amount and species composition of locally caught bait species for the whole fishing area.

Bycatch species that are not used as bait are discarded and considered in the same section. These include all crabs, gastropods and all cormorants. According to Shester (2008), it was impossible to get exact estimates of the mortality of discards but did note that the majority of crabs were released alive while all cormorants had expired before they reached the boat.

## 7.3 Endangered, threatened and protected (ETP) species

Shester (2008) did not observe any interactions between sea lion or other marine mammals and lobster traps. The California Sea Lion (*Zalophus californianus*) and grey whale (*Eschrichtius gibbosus*) are listed by the IUCN as a lower risk or “least concern” species and populations of sea lions are increasing. He did receive anecdotal information from a lobster fisherman that a leatherback sea turtle (*Dermochelys coriacea*) became entangled in

his lobster line but he released it alive. Leatherback turtles have been listed as critically endangered on CITES Red List since 2000. The previous assessment mentioned a sighting of a grey whale (*Eschrichtius gibbosus*) calf with a rope entangled in its fluke, but it is not known whether the rope was connected with the lobster fishery (SCS 2004). No harm to the calf was reported in that incidence.

#### **7.4 Habitat impacts and lost gear**

Eno *et al.* (1999), working on crustacean fisheries in the UK, described very few direct impacts to benthic habitats associated with the use of traps. They conducted several studies on the effects of lobster and crab pots on different types of habitat. Observations of pots being hauled from a variety of habitat types revealed that the habitats and their communities “appeared relatively unaffected by the fishing activity” (Eno *et al.* 1999). A review of the potential impacts to habitat from a variety of fishing gear types conducted in Florida, USA, found that the only indications of adverse impacts to habitat resulting from the use of pots and traps were associated with corals and hard-bottom habitats (Barnette 2001). The study conducted by Geoff Shester (2008), mentioned above, also provided valuable information regarding habitat impacts of lobster traps. Habitat surveys in the area of the fishery revealed low relief habitat made primarily of sand and cobble and the majority of hard substrate was covered by coralline red algae. *Eisenia* kelp and gorgonian corals are common throughout the area. Experimental evidence was provided that crushing that occurs when traps fall onto the seafloor has minimal impacts on gorgonian corals (Shester 2008). Rarely, traps may drag across the seafloor. Dragged traps damaged less than 5% of the coral skeleton and no corals were detached from the seafloor. Sponges and kelp did not show any visible damage. Macroalgae specialists interviewed during the onsite visits (Drs. Elisa Serviére and Margarita Casas) mentioned the occasional effect of traps pulling off bottom algae during the extraction procedure, as well as fishers on occasion cutting *Macrocystis* when entangled in the traps being pulled. They regarded the impacts of such actions as negligible. The results of Shester’s study show that traps have a minimal impact on the associated ecosystem, and that ghost fishing is not occurring at levels that would suggest any problems in terms of adding significant unknown or unobserved mortality to spiny lobsters or other species (Shester 2008). Ghost fishing mortality through lost lobster traps was estimated to be between 1-2 % of total landed lobster catch annually and has likely been reduced because biodegradable traps were implemented in the fishery in 2007 (Shester 2008). Habitat impacts of the fishery are discussed in greater detail in Principle 2 Performance Indicator rationales of this report.

#### **7.5 Trophic relationships**

Trophic interactions influence the structure and functions of ecosystems. Information on the diet of *P. interruptus* is scarce but the species is thought to be omnivorous feeding on gastropods, fish, decapods and red and brown algae (Diaz-Arredondo and Guzman del Proo, 1995). More recently Castaneda-Fernandez *et al.* (2005b) determined that juvenile spiny lobster (*P. interruptus*) primarily consumed isopods and amphipods as well as seagrass (*Phyllospadic* spp.) and calcareous algae at 2 different sites along the Baja California Peninsula. In addition, it has been suggested that bait input from lobster fisheries in many parts of the world contribute to the nutrition of lobsters in areas where the fishery is operating. It is known from other lobster species, that juvenile lobster are consumed by cephalopods and small fish, whereas several larger fish species can consume adult lobster (MacArthur *et al.* 2007). Major lobster predators in Baja California include California sheephead (*Semicossyphus pulcher*) and octopus (*Octopus* sp.) (Shester 2008).

Fisheries research is more and more committing to developing tools to incorporate an ecosystem approach into fisheries management. Multi-species ecosystem modelling describing trophic interactions have been recently used in the Pacifico Norte region of Baja California, specifically the rocky coastal ecosystem in Bahia Tortugas, Mexico using Ecopath software (Morales-Zarate *et al.* submitted). Results suggests that for exploited lobster populations, predation and competition are stronger stressors than current fishing effort. The model considered an area of 600 km<sup>2</sup> and 23 functional groups, inputs were based on real data (biomass estimates, stomach content and ecological observations) that were collected between 2006 and 2008. However, as the authors

pointed out, since the spiny lobster is a key component of the ecosystem, any increase in fishing pressure could lead to potential impacts on the entire ecosystem.

## **8. TRACKING AND TRACEABILITY**

Traceability of product from the sea to the consumer is vital to ensure that the MSC standard is maintained. There are several aspects to traceability that the MSC require to be evaluated: Traceability within the fishery; at-sea processing; at the point of landing; and subsequently the eligibility of product to enter the chain of custody.

### **8.1 Traceability within the fishery**

Lobster are landed by fishermen from each cooperative at designated shore-side processing plants, each which services a very specific set of between 1 and 3 cooperatives. To make deliveries, the fishermen must be part of the cooperative, and in good standing with the cooperative or landings are not allowed. Each boat offloads lobster to the processing plant holding pens or directly to the plant. The lobsters are logged in, and the catch recorded so that each fisherman can get paid. In addition the boats used are small enough that travel beyond the limit of the certified fishery is highly unlikely. All of these factors taken into account provide that there is virtually no risk of commingling with non-certified product.

### **8.2 At-sea processing**

Processing at sea does not occur in this fishery.

### **8.3 Points of landing**

All lobsters from all cooperatives are landed in the port of Ensenada.

### **8.4 Eligibility to enter Chains of Custody**

Companies buying directly from this fishery are required to have chain of custody certification and shall keep a record of the landing slip to ensure that product originated from the certified fishery.

This report does not cover processing beyond the point of landing. This report acknowledges that sufficient monitoring takes place to identify the fishery of origin for all landed Lobster. This is sufficient to allow a Chain of Custody to be established from the point of landing forward for all products derived from the fishery. MSC chain of custody certifications were not undertaken in this project, and therefore, needs to be undertaken on a separate and individual basis for those entities that may wish to identify and/or label products derived from the fishery.

### **8.5 Actual Eligibility Date**

The Actual Eligibility Date, the date from which product from a certified fishery is potentially eligible to bear the label if the fishery is certified, for this fishery is set as 1 September 2010 to coincide with the beginning of the fishing season.

## **9. OTHER FISHERIES IN THE AREA**

Abalone (*Haliotis* sp.), caracol (conch shells), algae (*Gelidium* sp.), sharks and finfish (approximately 21 species) are taken in the area of the lobster fishery by the members of the Cooperatives. These activities do not typically effect or interact with lobster fishing operations as the Cooperatives use separate boats, fishers and gear for these activities.

## **10. MSC PRINCIPLES AND CRITERIA**

### **10.1 MSC Principle 1 – Stock Status and Harvest Strategy**

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted; the fishery must be conducted in a manner that demonstrably leads to their recovery.

Intent: The intent of this principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favor of short term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

MSC Criteria:

1. The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.
2. Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.
3. Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.

### **10.2 MSC Principle 2 – Ecosystem**

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Intent: The intent of this principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.

MSC Criteria:

1. The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.
2. The fishery is conducted in a manner that does not threaten biological diversity at the genetic, species or population levels and avoids or minimizes mortality of, or injuries to endangered, threatened or protected species.
3. Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

### **10.3 MSC Principle 3 – Management**

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

Intent: The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

MSC Criteria:

- A. Management System Criteria:

1. The fishery shall not be conducted under a controversial unilateral exemption to an international agreement.

The management system shall:

2. demonstrate clear long-term objectives consistent with MSC Principles and Criteria and contain a consultative process that is transparent and involves all interested and affected parties so as to consider all relevant information, including local knowledge. The impact of fishery management decisions on all those who depend on the fishery for their livelihoods, including, but not confined to subsistence, artisanal, and fishing-dependent communities shall be addressed as part of this process;
3. be appropriate to the cultural context, scale and intensity of the fishery – reflecting specific objectives, incorporating operational criteria, containing procedures for implementation and a process for monitoring and evaluating performance and acting on findings;
4. observe the legal and customary rights and long term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability;
5. incorporates an appropriate mechanism for the resolution of disputes arising within the system;
6. provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing;
7. act in a timely and adaptive fashion on the basis of the best available information using a precautionary approach particularly when dealing with scientific uncertainty;
8. incorporate a research plan – appropriate to the scale and intensity of the fishery – that addresses the information needs of management and provides for the dissemination of research results to all interested parties in a timely fashion;
9. require that assessments of the biological status of the resource and impacts of the fishery have been and are periodically conducted;
10. specify measures and strategies that demonstrably control the degree of exploitation of the resource, including, but not limited to:
  - a) set catch levels that will maintain the target population and ecological community's high productivity relative to its potential productivity, and account for the non-target species (or size, age, sex) captured and landed in association with, or as a consequence of, fishing for target species;
  - b) identify appropriate fishing methods that minimize adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
  - c) provide for the recovery and rebuilding of depleted fish populations to specified levels within specified time frames;
  - d) have mechanisms in place to limit or close fisheries when designated catch limits are reached;
  - e) establish no-take zones where appropriate;
11. contain appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specify corrective actions to be taken in the event that they are.

B. MSC Operational Criteria:

Fishing operations shall:

12. make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimize mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive;
13. implement appropriate fishing methods designed to minimize adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
14. not use destructive fishing practices such as fishing with poisons or explosives;
15. minimize operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.;

16. be conducted in compliance with the fishery management system and all legal and administrative requirements; and
17. assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.

#### **10.4 Interpretations of MSC Principles for Performance Assessments**

Along with developing a standard for sustainable fisheries management, the MSC also developed a certification methodology that provides the process by which all fisheries are to be evaluated. Accreditation Services International (ASI) accredits certification bodies that can show that the expertise and experience necessary to carry out MSC evaluation is present in the organization. In addition, each certification body must demonstrate its fluency with the MSC standards and evaluation methods through the use of these in a fishery evaluation.

The methods are provided in great detail through documents that can be downloaded from the MSC website ([www.msc.org](http://www.msc.org)). The Fisheries Assessment Methodology (FAM) Version 2.1, released 1 May 2010 is being used for the assessment of the lobster fishery.

The MSC Principles and Criteria are general statements describing what aspects need to be present in fisheries to indicate that they are moving toward sustainable management. The certification approach or methodology adopted by the MSC requires that any assessment of a fishery or fisheries move beyond a management verification program that simply provides third-party assurances that a company's stated management policies are being implemented. The MSC's 'Certification Methodology' is designed to be an evaluation of a fishery's performance to determine if the fishery is being managed consistent with emerging international standards of sustainable fisheries.

#### **11. ASSESSMENT TEAM PERFORMANCE EVALUATIONS**

After completing all the reviews and interviews, the assessment team is tasked with utilizing the information it has received to assess the performance of the fishery. Under the MSC program, an Assessment Tree is determined for this task. The proposed Assessment Tree is made available for public comment for a period of 30 days. All comments are considered and the Assessment Tree revised where appropriate. The finalized Assessment Tree is used to evaluate the performance of the fishery. Unless determined unsuitable for the particular fishery, the MSC Default Assessment Tree is used whereby the weighting of the Performance Indicators is pre-determined. The Risk-Based Framework may also be used for data poor fisheries. The Assessment Tree may also be modified to suit the specifics of the fishery. In such a case, the process for assessing the fishery is performed by prioritizing and weighting the Performance Indicators (PI) relative to one another at each level of the performance hierarchy established when the assessment team develops the Assessment Tree for the fishery. Each PI has three associated Scoring Guideposts (SG) set at 60, 80 and 100. The SGs have specific elements that must be met for the fishery to get at least a partial score for the particular SG. Each PI under each Principle is weighted so that each of the three Principles is equal to one another. If a fishery scores less than 60 for any PI, it is excluded from certification. The process requires that all team members work together to discuss and evaluate the information they have received for a given performance indicator and come to a consensus decision on weights and scores. Scores and weights are then combined to get overall scores for each of the three MSC Principles. A fishery must have normalized scores of 80 or above on each of the three MSC Principles to be recommended for certification. Should an individual PI receive a score of less than 80, a 'Condition' is established that when met, would bring the fishery's performance for that indicator up to the 80 level score representing a well-managed fishery.

The Default Assessment Tree v.2.1 (MSC, May 2010) was used for this assessment.

Below is a written explanation of the assessment team's evaluation of the information it received and the team's interpretation of the information as it pertains to the fishery's compliance with the MSC Principles and Criteria. A quick guide to the references used for each rationale may be found in the "trace references."

## 11.1 MSC Principle 1

**A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.**

| 1.1.1   |   |   |
|---|---|---|
| The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing. |   |   |
| SG 60   | SG 80   | SG 100  |
| It is <u>likely</u> that the stock is above the point where recruitment would be impaired.                      | It is <u>highly likely</u> that the stock is above the point where recruitment would be impaired.<br>The stock is at or fluctuating around its target reference point.<br><br>The stock is at or fluctuating around its target reference point. | There is a <u>high degree of certainty</u> that the stock is above the point where recruitment would be impaired.<br><br>There is a <u>high degree of certainty</u> that the stock has been fluctuating around its target reference point, or has been above its target reference point, <u>over recent years</u> . |

**Score: 80**

### 1.1.1 Scoring Rationale

The fishery uses the level of biomass at MSY ( $B_{MSY}$ ) as a target reference point. In order to evaluate the status of the stock, the current biomass ( $B$ ) is compared with the reference point ( $B/B_{MSY}$ ) and expected to have a value higher than 1. The latest stock assessment using a Biomass Dynamic Model (Hilborn and Walters, 1992) indicated that current biomass is 1.5 larger than the biomass at MSY (Vega et al. 2010), and it has fluctuated around that level in the last five years. In the last assessment of the fishery the level of recruitment was not evaluated. Based on the current values of biomass for the last five years (Vega *et al.* 2010) and taking into consideration the results of former assessments and the nature of the models (Vega 2003, Vega 2006, Hilborn and Mangel 1997), it is highly likely that the stock is above the point where recruitment would be impaired. It is noted, however, that a higher degree of certainty, that the stock is above the point where recruitment would be impaired, can be attained if a model that reflects the level of recruitment was used in the last assessment. This is recommended (see PI 1.2.4 below).

### 1.1.1 Trace References

Vega et al. (2010), Hilborn and Mangel (1997), Hilborn and Walters (1992).

| 1.1.2   |  |   |
|---|--|---|
| Limit and target reference points are appropriate for the stock.              |  |   |
| SG 60   | SG 80  | SG 100  |
| <u>Generic</u> limit and target reference points are based on justifiable and | Reference points are appropriate for the stock and can be estimated.<br><br>The limit reference point is set above | The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of relevant |

|  |  |  |
|--|--|--|
| <p>reasonable practice appropriate for the species category.</p> | <p>the level at which there is an appreciable risk of impairing reproductive capacity.</p> <p>The target reference point is such that the stock is maintained at a level consistent with BMSY or some measure or surrogate with similar intent or outcome.</p> <p>For low trophic level species, the target reference point takes into account the ecological role of the stock.</p> | <p><u>precautionary issues.</u></p> <p>The target reference point is such that the stock is maintained at a level consistent with BMSY or some measure or surrogate with similar intent or outcome, <u>or a higher level</u>, and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty.</p> |
|--|--|--|

**Score: 80**

**1.1.2 Scoring Rationale**

The Reference Point for this fishery is the Biomass at MSY level ( $B_{MSY}$ ), but Fishing Mortality, Effort and Rate of exploitation at MSY are also considered. . The management objective is to maintain a larger yearly biomass with respect to  $B_{MSY}$  ( $B / B_{MSY} > 1$ ), with a precautionary limit at the  $B / B_{MSY} = 1$  level. The stock is assessed by a Biomass Dynamic Model, and the current biomass for the last five seasons has been kept above the  $B_{MSY}$ , (e.g.  $B / B_{MSY}=1.5$  in 2010) (Vega 2006, and Vega et al. 2010). These results indicate that the impairing of the reproductive capacity of the stock has been avoided. Due to the nature of the species and the level of the current biomass of the stock, the target reference points are appropriate. The  $B_{MSY}$  and  $F_{MSY}$  are the most common target references points used (Punt 2010). However, the assessment of uncertainty should be improved during the assessment process (see IP 1.2.4 below). Therefore all elements of the 80 scoring guideposts are met.

**1.1.2 Trace References**

Vega (2006), Vega et al. (2010), Punt (2010)

|   |   |   |
|---|---|---|
| <p><b>1.1.3</b></p>   |   |   |
| <p>Where the stock is depleted, there is evidence of stock rebuilding.</p>  |   |   |
| <p><b>SG 60</b></p>   | <p><b>SG 80</b></p>   | <p><b>SG 100</b></p>  |
| <p>Where stocks are depleted rebuilding strategies which have a <u>reasonable expectation</u> of success are in place.</p> <p>Monitoring is in place to determine whether they are effective in rebuilding the stock within a <u>specified</u> timeframe.</p> | <p>Where stocks are depleted rebuilding strategies are in place.</p> <p>There is <u>evidence</u> that they are rebuilding stocks, or it is highly likely based on simulation modeling or previous performance that they will be able to rebuild the stock within a <u>specified</u> timeframe</p> | <p>Where stocks are depleted, strategies are <u>demonstrated</u> to be rebuilding stocks continuously and there is strong evidence that rebuilding will be complete within the <u>shortest practicable</u> timeframe.</p> |

**Score: N/A**

Performance Indicator 1.1.3 is not scored because the stock is currently not depleted and there is no stock rebuilding mechanism in operation

## 1.2.1

There is a robust and precautionary harvest strategy in place.

| SG 60   | SG 80   | SG 100  |
|---|---|---|
| <p>The harvest strategy is <u>expected</u> to achieve stock management objectives reflected in the target and limit reference points.</p> <p>The harvest strategy is <u>likely</u> to work based on prior experience or plausible argument.</p> <p><u>Monitoring</u> is in place that is expected to determine whether the harvest strategy is working.</p> | <p>The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy <u>work together</u> towards achieving management objectives reflected in the target and limit reference points.</p> <p>The harvest strategy may not have been fully tested but monitoring is in place and <u>evidence</u> exists that it is achieving its objectives.</p> | <p>The harvest strategy is responsive to the state of the stock and is <u>designed</u> to achieve stock management objectives reflected in the target and limit reference points.</p> <p>The performance of the harvest strategy has been <u>fully evaluated</u> and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.</p> <p>The harvest strategy is <u>periodically reviewed and improved</u> as necessary.</p> |

### **Score: 90**

#### **1.2.1 Scoring Rationale**

There is a very well developed strategy that is reviewed on an annual basis in order to produce the Annual Harvesting Program. The Annual Harvesting Program contains the strategy for each of the 10 Cooperatives of the Unit of Certification (see Section 5.0 this report). The strategy is designed to achieve the management objectives to maintain the current biomass above the  $B_{MSY}$ , with a limit when current biomass equals  $B_{MSY}$  ( $B/B_{MSY}=1$ ) There has not been a formal evaluation of the harvest strategy. However, taking into consideration the current level of biomass and the former assessment results, where the current biomass for the last five seasons has been kept above the  $B_{MSY}$ , (e.g.  $B/B_{MSY}=1.5$  in 2010); it is reasonable to assume that the harvest strategy is achieving the objective by maintaining the stock at target level. The main components of the harvesting strategy are: 1) limited access rights, given through concessions, which define limitations of fishing areas and limit the number of boats and traps by each cooperative; 2) regulatory measures protecting reproduction and recruitment, such as minimum size limits, area temporal closures, protection to ovigerous females and escape windows in traps for under minimum size lobsters, and 3) mechanisms of coordination and co-management, facilitating the coordination between fishers and technical personnel of INAPESCA starting from the collection of data and monitoring up to the discussion of research results, where recommendations for management are openly and transparently discussed before their submission to fisheries authorities. This harvest strategy is reviewed on a yearly basis. All elements of the 80 scoring guideposts are met, in addition the first and last element of the 100 scoring guideposts are met.

#### **1.2.1 Trace References**

Ramade, 2010, Section 5.0 of this report.

## 1.2.2

There are well defined and effective harvest control rules in place.

| SG 60  | SG 80   | SG 100  |
|--|---|---|
| <p><u>Generally understood</u> harvest control rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.</p> <p>There is <u>some evidence</u> that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.</p> | <p><u>Well defined</u> harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.</p> <p>The <u>selection</u> of the harvest control rules takes into account the <u>main</u> uncertainties.</p> <p><u>Available evidence indicates</u> that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.</p> | <p>The <u>design</u> of the harvest control rules take into account a <u>wide</u> range of uncertainties.</p> <p><u>Evidence clearly shows</u> that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.</p> |

**Score: 90**

### 1.2.2 Scoring Rationale

Harvesting control rules are applied by each cooperative based on the results of the latest fishing season and they control the fishing effort level (number of boats and traps) for the following season in order to maintain the current biomass above the  $B_{MSY}$ . Also, in order to avoid market prices uncertainties, prices of lobster in the market are monitored during the fishing season and potential earnings are constantly evaluated in order to control the fishing effort and assess an early close of the season due to poor economical gains. The current biomass levels from the latest assessments (Vega 2000, Vega 2003, Vega 2006 and Vega et al. 2010) indicate that biomass has been kept in an optimal level or above. This provides evidence that harvest control rules have been effective.

### 1.2.2 Trace References

Vega 2000, Vega 2003, Vega 2006, Vega et al. 2010, Ramade, 2010 and Section 5.0 this report.

## 1.2.3

Relevant information is collected to support the harvest strategy.

| SG 60  | SG 80  | SG 100   |
|--|--|--|
| <p><u>Some</u> relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.</p> <p>Stock abundance and fishery removals are</p> | <p><u>Sufficient</u> relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.</p> <p>Stock abundance and fishery removals are <u>regularly monitored at a level of accuracy and coverage consistent with the harvest control rule</u>, and one or</p> | <p>A <u>comprehensive range</u> of information (on stock structure, stock productivity, fleet composition, stock abundance, fishery removals and other information such as environmental information), including some that may not be directly relevant to the current harvest strategy, is available.</p> <p><u>All information</u> required by the harvest</p> |

|  |   |   |
|--|---|---|
| monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule. | more indicators are available and monitored with sufficient frequency to support the harvest control rule.<br><br>There is good information on all other fishery removals from the stock. | control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of the inherent <u>uncertainties</u> in the information [data] and the robustness of assessment and management to this uncertainty. |
|--|---|---|

**Score: 80**

**1.2.3 Scoring Rationale**

The stock assessment in the central area of the Baja California peninsula is based on the information obtained from only 9 of the 10 Cooperatives that constitute the Unit of Certification (up today the information of the cooperative at Guadalupe Island has not been included). However, it is believed that the entire population of *P. interruptus* in the Eastern Pacific is a single stock, based on genetics work (García-Rodríguez and Perez-Enriquez, 2006), and the central area is the “center of the population,” and the population assessment at this central part reflects the hole population status (Vega *et al.* 2010), In order to gather the necessary information, each Cooperative established an internal Fisheries Department which allows the observation of the fishery and constant recording of the fishery information for each cooperative. Monitoring programs for recording the monthly catch and effort information have been developed in conjunction with INAPESCA. Additionally, monthly records of the size and sex structure of the total catch are recorded. During the closed season, the reproductive stage of the lobster is also monitored. Moreover, the market prices are monitored during the fishing season in order to evaluate the economical operation feasibility. All this information is used to provide data to assess the effectiveness of the harvest strategy and is the bases for the stock assessment carried out by the INAPESCA. Other fishery removal information (catch) of the stock, located in the north and south areas of Baja California (**Figure 1**), are fairly well known (Vega, 2006, Vega et al. 2010) and recorded by CONAPESCA. Also *P. interruptus* information from the commercially and recreationally fisheries in California, USA, are systematically recorded (Barsky, 2001), allowing comparisons in the general tendencies between the central Baja California and California fisheries (Vega 2006).

**1.2.3 Trace References**

García-Rodríguez and Perez-Enriquez, 2006); Vega, 2006; Vega et al. 2010; Barsky, 2001; Ramade, 2010 and Section 5.0 this report.

| <b>1.2.4</b>  |  |   |
|---|--|---|
| There is an adequate assessment of the stock status.  |  |   |
| <b>SG 60</b>  | <b>SG 80</b>   | <b>SG 100</b>   |
| The assessment estimates stock status relative to reference points.<br><br>The major sources of uncertainty are identified. | The assessment is appropriate for the stock and for the harvest control rule, and is evaluating stock status relative to reference points.<br><br>The assessment takes uncertainty into account. | The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery.<br><br>The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.<br><br>The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored. |

|  |   |   |
|--|---|---|
|  | The stock assessment is subject to peer review. | The assessment has been <u>internally and externally</u> peer reviewed. |
|--|---|---|

**Score: 75**

**1.2.4 Scoring Rationale**

During the last ten years, the fishery has been assessed using several models (Vega *et al.* 2000; Vega, 2003; Vega, 2006) in order to obtain stronger recommendations in line with suggestions in the literature (eg. Hilborn and Walters, 1992; Hilborn and Mangel, 1997). However, during the last stock assessment, Vega *et al.* (2010) only used a Biomass Dynamic Model that allowed them to evaluate the present status of the stock (as B current biomass, F current fishing mortality, or f current exploitation rate) relative to the reference points ( $B_{MSY}$ ,  $F_{MSY}$ , and  $f_{MSY}$ ). Although this approach has had a long history in fisheries stock assessment, and is fairly straight forward to apply, it generally ignores the impact of stochasticity in the population dynamics (eg. recruitment fluctuations) (Punt, 2010). During the past assessments of this fishery, efforts to understand the effects of recruitment dynamics were undertaken by applying the modified Leslie-DeLury model (Vega, 2006) or the delayed impact of the recruitment in the biomass using the LRSG model (Hilborn and Mangel, 1997; Vega *et al.* 2000; Vega 2006) and their lack of use in the latest assessment are considered here for the scoring.

It is highly recommended that a model or models that better explain the biology of the resource be systematically used and updated. Also, methods that represent uncertainty and that allow the estimation of confidence intervals of the estimated parameters is highly recommended to be developed and applied. It is highly recommended that in order to quantify uncertainties, an effort to include information from other fishing areas or fisheries such as the one in California, USA be considered. Finally, during the reviewing process for this certification, the CB did not find any information that allowed the assessment team to verify whether stock assessments are peer reviewed, either internally or externally. Peer review of the assessment is highly also recommended.

Until now, INAPESCA has carried out the stock assessment based on the information of the Cooperatives located in the central part of the peninsula (Vega *et al.* 2000, Vega, 2003, Vega, 2006, Vega *et al.* 2010), however, the FEDECOOP intends to include for this certification the Abuloneros y Langosteros (AyL) cooperative, based in Isla Guadalupe. The fishing effort (number of traps) of this cooperative represents only 2% (n=320) of the total effort from the cooperatives that constitute the Unit of Certification (Table 2), with a mean catch of 7.2 t in the last five seasons, representing the 0.5% of the mean total catch (n=1,378 t) of all cooperatives of the Unit of Certification. Even the catch and effort of AyL cooperative are low, they should be included in future stock assessments.

We recognize that almost no sublegal size California spiny lobster is landed (based on Vega *et al.* 2010), however, post-release mortality has not been evaluated and assumed to be low. During the evaluation process we found some information reporting that in one specific fishing area “the bycatch of sublegal spiny lobster is substantially high (86%) which, depending on the post-release mortality, could be a concern” (Shester, 2008). In order to evaluate the degree of concern of this mortality, the assessment of the post-release mortality is highly recommended in incorporated into the stock assessment process.

**1.2.4 Trace References**

Vega *et al.* (2000), Vega (2003), Vega (2006), Vega *et al.* (2010), Hilborn and Walters (1992), Hilborn and Mangel (1997), Shester (2008), Punt (2010)

**Condition 1.2.4:**

By the first annual surveillance audit the client shall provide evidence that the stock assessment has been modified to be more appropriate for the stock. The client shall consider using a model that accurately represents the biology of the resources and which better represents the uncertainties in the parameters estimations and includes the Guadalupe Island fishery information. In addition provide some evidence to the CB that the stock assessment has been peer reviewed either internally or externally. By the second surveillance audit, provide some evidences that the post-release mortality of the sublegal size California spiny lobster has been assess and incorporated in the assessment process.

**11.2 MSC Principle 2**

**Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.**

| <b>2.1.1</b>   |   |  |
|--|---|--|
| The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species.  |   |  |
| <b>SG 60</b>   | <b>SG 80</b>  | <b>SG 100</b>  |
| Main retained species are <u>likely</u> to be within biologically based limits or if outside the limits there are <u>measures</u> in place that are <u>expected</u> to ensure that the fishery does not hinder recovery and rebuilding of the depleted species.<br><br>If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the retained species to be outside biologically based limits or hindering recovery. | Main retained species are <u>highly likely</u> to be within biologically based limits, or if outside the limits there is a <u>partial strategy</u> of <u>demonstrably effective</u> management measures in place such that the fishery does not hinder recovery and rebuilding. | There is a <u>high degree of certainty</u> that retained species are within biologically based limits.<br><br>Target reference points are defined and retained species are at or fluctuating around their target reference points. |

**Score: 100**

**2.1.1 Scoring Rationale:** This Performance Indicator (as well as 2.1.2 and 2.1.3), only considers non-target species that are retained by the fishery under assessment because of their commercial value or because of management requirements. Bait species are covered under bycatch of principle 2.2.1. Other species known to occasionally suffer a direct interaction with fishery gear, although not taken in pots, include sea turtles, seals and horn sharks these protected species are assessed in PI 2.3.1 Therefore there are no retained species in this fishery and in accordance with guidance 7.2.3 of the FAM v2, this performance indicator was scored at 100.

| <b>2.1.2</b>  |              |               |
|---|--------------|---------------|
| There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species. |              |               |
| <b>SG 60</b>  | <b>SG 80</b> | <b>SG 100</b> |

|  |   |  |
|--|---|--|
| <p>There are <u>measures</u> in place, if necessary, that are expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.</p> | <p>There is a <u>partial strategy</u> in place, if necessary that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.</p> | <p>There is a <u>strategy</u> in place for managing retained species.</p>  |
| <p>The measures are considered <u>likely to work</u>, based on plausible argument (eg, general experience, theory or comparison with similar fisheries/species).</p>   | <p>There is some <u>objective basis for confidence</u> that the partial strategy will work, based on some information directly about the fishery and/or species involved.</p>   | <p>The strategy is mainly based on information directly about the fishery and/or species involved, and <u>testing</u> supports <u>high confidence</u> that the strategy will work.</p> |
|  | <p>There is <u>some evidence</u> that the partial strategy is being <u>implemented successfully</u>.</p>  | <p>There is <u>clear evidence</u> that the strategy is being <u>implemented successfully</u>, and intended changes are occurring.</p>  |
|  |   | <p>There is some evidence that the strategy is <u>achieving its overall objective</u>.</p>   |

**Score: 100**

**2.1.2 Scoring Rationale:** There are no retained species other the targeted species in this fishery and no strategy is necessary. Therefore, because no non-target species are retained for commercial purposes and in accordance with guidance 7.2.3 of the FAM v2.1, this performance indicator was scored at 100.

| <p><b>2.1.3</b></p>  |   |  |
|--|---|--|
| <p>Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species.</p>   |   |  |
| <p><b>SG 60</b></p>  | <p><b>SG 80</b></p>   | <p><b>SG 100</b></p>   |
| <p><u>Qualitative information</u> is available on the amount of main retained species taken by the fishery.</p> <p>Information is <u>adequate</u> to <u>qualitatively</u> assess outcome status with respect to biologically based limits.</p> <p>Information is adequate to support <u>measures</u> to manage <u>main</u> retained species.</p> | <p><u>Qualitative information</u> and some quantitative information are available on the amount of main retained species taken by the fishery.</p> <p>Information is <u>sufficient</u> to estimate outcome status with respect to biologically based limits.</p> <p>Information is adequate to support a <u>partial strategy</u> to manage <u>main</u> retained species.</p> <p>Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).</p> | <p>Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations.</p> <p>Information is <u>sufficient</u> to <u>quantitatively</u> estimate outcome status with a <u>high degree of certainty</u>.</p> <p>Information is adequate to support a <u>comprehensive strategy</u> to manage retained species, and evaluate with a <u>high degree of certainty</u> whether the strategy is achieving its objective.</p> <p>Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.</p> |

**Score: 100**

**2.1.3 Scoring Rationale:** There are no retained species other than the targeted species in this fishery. Sufficient information on the nature and extent of retained species, at a level of detail relevant to the nature of the fishery, is known. Because no non-target species are retained for commercial purposes and in accordance with guidance 7.2.3 of the FAM v2.1, this performance indicator was scored at 100.

| <b>2.2.1</b>   |   |   |
|--|---|---|
| The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups.  |   |   |
| <b>SG 60</b>   | <b>SG 80</b>  | <b>SG 100</b>   |
| Main bycatch species are <u>likely</u> to be within biologically based limits, or if outside such limits there are mitigation <u>measures</u> in place that are <u>expected</u> to ensure that the fishery does not hinder recovery and rebuilding.<br><br>If the status is poorly known there are measures or practices in place that are expected result in the fishery not causing the bycatch species to be biologically based limits or hindering recovery. | Main bycatch species are <u>highly likely</u> to be within biologically based limits or if outside such limits there is a <u>partial strategy of demonstrably effective</u> mitigation measures in place such that the fishery does not hinder recovery and rebuilding. | There is a <u>high degree of certainty</u> that bycatch species are within biologically based limits. |

**Score: 70**

**2.2.1 Scoring Rationale:**

The main bycatch species groups by number and weight are shellfish (Shester 2008). Approximately 63% of total weight is shellfish and 20% finfish. For the purposed of the study Shester pooled all invertebrates except lobsters, corals, and sponges as ‘shellfish’. The estimates derived from 49 observed trips (= 4,563 traps) (Shester, 2008). Assuming an annual total catch of 1,500 t per year (maximum over the last 10 years) this would equate to a total of 195 t of bycatch per year (122 t, 39 t for shellfish and finfish respectively). The fate of most of these species is unknown; Shester (2008) noticed however that the majority of crabs were released alive. The most significant bycatch in this fishery may be cormorants (8%) because all cormorants had expired before they reached the boat. Cormorants may be considered a main bycatch species under the MSC standard because of their vulnerability and of their pivotal role as top predator in the ecosystem. During the interviews, fishermen stated that cormorants are present only in some areas and closer to shore, indicating that the incidence of 8% may not be applicable to the whole fishing area. In addition, considering the nature of the fishery and the fact that most of the bycatch (63% shellfish) were released alive, it is highly likely that all of these bycatch species are within the biologically based limits.

Consideration of bait species was highly weighted in assessment of this fishery. Lobster traps are baited each time they are checked and the daily biomass of bait exceeds the lobster catch throughout the fishery. Approximately 2.3 to 3.5 kg of bait is used per kg of landed lobster catch, which equates to total use of approximately 4,500 to 5,000 t of bait in the whole area of assessment per season (M. Ramade pers. com). Oily fishes such as sardines, mackerel and bonito are mostly used for bait and purchased in Ensenada, Mexico, and therefore derive from commercial and managed fishery (see invoice sample Appendix 1). Stock assessments are conducted for these species (Nevárez-Martínez et al. 1993a, b, 1999). Therefore it is highly likely that these species are within the biologically based limits based on reference points.

However, according to Shester (2008), in Bahia Tortugas for example, 1/3 of the bait that is used is mixed finfish species that are caught locally. This is likely to vary between areas and month in the fishing season. The main species that are caught locally for bait include barred sand bass (*Paralabrax nebulifer*) and ocean whitefish (*Caulolatilus princeps*). None of these species are currently managed or assessed since there is no commercial fishery for these species. Therefore it is difficult to determine the stock status of these species with certainty. Further studies are needed to monitor and record the amount and species composition of locally caught bait species for the whole fishing area. Considering that the status of 1/3 of the bait species is poorly known this Performance Indicator was scored below 80 overall.

### 2.2.1 Trace References

Nevárez-Martínez et al. (1993a, b), 1999, Shester (2008)

**Condition 2.2.1:** By the second surveillance audit, the client shall provide details to the CB about the amount and origin of bait species used in the fishery. By the third annual surveillance provide some evidence to the CB that the bait species that are caught locally are highly likely to be within biologically based limits.

### 2.2.2

There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations.

| SG 60   | SG 80   | SG 100  |
|---|---|---|
| <p>There are <u>measures</u> in place, if necessary, which are expected to maintain main bycatch species at levels which are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery.</p> <p>The measures are considered <u>likely</u> to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).</p> | <p>There is a <u>partial strategy</u> in place, if necessary, for managing bycatch that is expected to maintain main bycatch species at levels which are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery.</p> <p>There is <u>some objective basis for confidence</u> that the partial strategy will work, based on some information directly about the fishery and/or the species involved.</p> <p>There is <u>some evidence</u> that the partial strategy is being implemented successfully.</p> | <p>There is a <u>strategy</u> in place for managing and minimising bycatch.</p> <p>The strategy is mainly based on information directly about the fishery and/or species involved, and testing supports <u>high confidence</u> that the strategy will work.</p> <p>There is <u>clear evidence</u> that the strategy is being implemented successfully, and intended changes are occurring. There is some evidence that the strategy is achieving its objective.</p> |

### Score: 70

**2.2.2 Scoring Rational:** Shester (2008) reported and fishermen confirmed that most bycatch (63% shellfish) are released alive. As explained above, Shester pooled all invertebrates except lobsters, corals, and sponges as ‘shellfish’. The study conducted by Shester (2008) reported that several mollusks have been utilized as bait in the past, but that this is no longer occurring. Therefore there is a partial strategy to maintain the main bycatch species at levels which are highly likely to be within biologically based limits, there is some confidence that the strategy is working and has been implemented. However, no such measure exists for cormorants that are caught in the traps. There is also a partial strategy in place to ensure that the majority of bait used (2/3) is restricted to fish species such as sardines, mackerel and bonito that are sourced from managed fisheries and

purchased in Ensenada, Mexico. There is evidence that this partial strategy is working (see copy of invoices Appendix 1). However up to 1/3 of all bait used may be caught locally and is taken from unmanaged fish stocks.

### 2.2.2 Trace References

Shester (2008)

**Condition 2.2.2:** By the third surveillance audit, the client shall provide evidence that main bycatch species including bait species used in the fishery are highly likely to be within biologically based limits, or if outside such limits there develop a partial strategy of demonstrably effective mitigation measures and provide some evidence to the CB that the strategy has been implemented successfully.

### 2.2.3

Information on the nature and amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch.

| SG 60  | SG 80  | SG 100  |
|--|--|---|
| <p><u>Qualitative information</u> is available on the amount of main bycatch species affected by the fishery.</p> <p>Information is <u>adequate to broadly understand</u> outcome status with respect to biologically based limits.</p> <p>Information is adequate to support <u>measures</u> to manage bycatch.</p> | <p><u>Qualitative information and some quantitative information</u> are available on the amount of main bycatch species affected by the fishery.</p> <p>Information is sufficient to estimate outcome status with respect to biologically based limits.</p> <p>Information is adequate to support a <u>partial strategy</u> to manage main bycatch species.</p> <p>Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).</p> | <p><u>Accurate and verifiable information</u> is available on the amount of all bycatch and the consequences for the status of affected populations.</p> <p>Information is <u>sufficient</u> to quantitatively estimate outcome status with respect to biologically based limits with a <u>high degree of certainty</u>.</p> <p>Information is adequate to support a <u>comprehensive strategy</u> to manage bycatch, and evaluate with a high degree of certainty whether a strategy is achieving its objective.</p> <p>Monitoring of bycatch data is conducted in sufficient detail to assess ongoing mortalities to all bycatch species.</p> |

### Score: 70

**2.2.3 Scoring Rationale:** The amount of the main bycatch species affected by the fishery are known and stated under PI 2.2.1 (Shester 2008). There is also qualitative and some quantitative information available on the amount and origin of bait used in the fishery. Overall the information is adequate to broadly understand the status of these species and is adequate to support a partial strategy to manage the main bycatch species. However data is not continuously collected on main bycatch and quantitative information on bait species is only available for a certain area of the fishery (Shester 2008). Therefore the fishery meets 2 of 4 elements of the guidepost 80 resulting in a score of 70.

### 2.2.3 Trace References

Shester (2008)

**Condition 2.2.3:** By the second surveillance audit, the client shall establish a scientifically defensible monitoring and reporting system for bycatch, including information on the amount and species that are use for bait, in the California Spiny Lobster Fishery.

**2.3.1**

The fishery meets national and international requirements for protection of ETP species.  
 The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species.

| SG 60   | SG 80   | SG 100   |
|---|---|--|
| <p>Known effects of the fishery are <u>likely</u> to be within limits of national and international requirements for protection of ETP species.</p> <p>Known direct effects are <u>unlikely</u> to create <u>unacceptable impacts</u> to ETP species.</p> | <p>The effects of the fishery are known and are <u>highly likely</u> to be within limits of national and international requirements for protection of ETP species.</p> <p>Direct effects are <u>highly unlikely</u> to create <u>unacceptable impacts</u> to ETP species.</p> <p>Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.</p> | <p>There is a <u>high degree of certainty</u> that the effects of the fishery are within limits of national and international requirements for protection of ETP species.</p> <p>There is a <u>high degree of confidence</u> that there are <u>no significant detrimental effects (direct and indirect)</u> of the fishery on ETP species.</p> |

**Score: 80**

**2.3.1 Scoring Rationale:** Fishing gear interactions with ETP species may occur if gear is concentrated in high-use areas for endangered whales or seals. The common points of whale entanglement are in the trap warp gear that runs from the traps to the buoy at the surface. However, because the fishery is conducted close in shore it is likely that interactions with whales occur very rarely. The previous assessment mentioned a sighting of a grey whale (*Eschrichtius gibbosus*) calf with a rope entangled in its fluke, but without the ability to retrospectively associate the rope to the lobster fishery it is difficult to know whether the interaction was with the fishery (SCS 2004). Grey whales are listed by the [International Union for Conservation of Nature](#) (IUCN Red List) as a lower risk or “least concern” species. No harm to the calf was reported in that incident. Humpback whales (*Megaptera novaeangliae*) could interact with fishing gear. However these large whales are highly migratory; stocks remain in coastal waters of Central America and Mexico during winter/spring and then migrate to summer feeding grounds, which extend from California to southern British Columbia, in summer/fall. Guadalupe Island is the breeding ground of the Guadalupe fur seal (*Arctocephalus townsendi*). Guadalupe fur seals are classified as vulnerable on the [IUCN Red List](#). Since the government of Mexico declared Guadalupe Island a pinniped sanctuary, populations are recovering. The Guadalupe fur seal population is increasing about 13.7% annually [Guadalupe Fur Seal \(Arctocephalus townsendi\) - Office of Protected Resources - NOAA Fisheries](#). In addition, due to the low fishing effort around the island it is expected that interactions are very rare. Shester (2008) received anecdotal information from a lobster fisherman that a leatherback sea turtle (*Dermochelys coriacea*) became entangled in his lobster line but he released it alive. Leatherback turtles have been listed as critically endangered on CITES ([Convention on International Trade in Endangered Species](#)) Red List since 2000.

Overall there seem to be very rare reports of harbor seals, other marine mammal or sea turtle interaction which was confirmed by interviews conducted with fishermen and representatives of local NGO groups (e.g. COBI, Conservación Islas) at the onsite meeting in Ensenada, Mexico. These indirect effects are therefore highly likely to be within limits of national and international requirements and unlikely to create unacceptable impact to ETP species. Therefore the fishery meets the 80 guideline for this Performance Indicator.

### 2.3.1 Trace References

Shester (2008)

### 2.3.2

The fishery has in place precautionary management strategies designed to:

- meet national and international requirements;
- ensure the fishery does not pose a risk of serious or irreversible harm to ETP species;
- ensure the fishery does not hinder recovery of ETP species; and
- minimize mortality of ETP species.

| SG 60   | SG 80  | SG 100  |
|---|--|---|
| <p>There are <u>measures</u> in place that minimize mortality, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.</p> <p>The measures are <u>considered likely</u> to work, based on <u>plausible argument</u> (eg. general experience, theory or comparison with similar fisheries/species).</p> | <p>There is a <u>strategy</u> in place for managing the fishery’s impact on ETP species, including measures to minimize mortality that is designed to be highly likely to achieve national and international requirements for the protection of ETP species.</p> <p>There is an <u>objective basis for confidence</u> that the strategy will work, based on <u>some information</u> directly about the fishery and/or the species involved.</p> <p>There is <u>evidence</u> that the strategy is being implemented successfully.</p> | <p>There is a <u>comprehensive strategy</u> in place for managing the fishery’s impact on ETP species, including measures to minimize mortality that is designed to achieve <u>above</u> national and international requirements for the protection of ETP species.</p> <p>The strategy is mainly based on information directly about the fishery and/or species involved, and a <u>quantitative analysis</u> supports <u>high confidence</u> that the strategy will work.</p> <p>There is <u>clear evidence</u> that the strategy is being implemented successfully, and intended changes are occurring. There is evidence that the strategy is achieving its objective.</p> |

### Score: 80

**2.3.2 Scoring Rationale:** Leatherback sea turtles (*Dermochelys coriacea*) listed on CITES Red List. The species occurs in the region and could potentially interact with the fishery. The strategy in place is a voluntary arrangement to release entangled species alive in the very rare event that a sea turtle is entangled in the lobster line. This is appropriate considering the scale, intensity and cultural context of the fishery (FAM 2.1, 7.1.22 guidance). There is some evidence that the agreement works and is implemented because in the rare event that interactions have occurred, there are reports from fishermen that the species were released alive.

### 2.3.3

Relevant information is collected to support the management of fishery impacts on ETP species, including:

- information for the development of the management strategy;
- information to assess the effectiveness of the management strategy; and
- information to determine the outcome status of ETP species.

| SG 60  | SG 80  | SG 100   |
|--|--|--|
| <p>Information is <u>adequate</u> to <u>broadly understand</u> the impact of the fishery on ETP species.</p> <p>Information is adequate to support <u>measures</u> to manage the impacts on ETP species</p> <p><u>Information</u> is sufficient to <u>qualitatively</u> estimate the fishery related mortality of ETP species.</p> | <p>Information is <u>sufficient</u> to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a <u>full strategy</u> to manage impacts.</p> <p><u>Sufficient data</u> are available to allow fishery related mortality and the impact of fishing to be <u>quantitatively</u> estimated for ETP species.</p> | <p>Information is <u>sufficient</u> to <u>quantitatively</u> estimate outcome status with a high degree of certainty.</p> <p>Information is adequate to support a <u>comprehensive strategy</u> to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives.</p> <p><u>Accurate and verifiable information</u> is available on the magnitude of all impacts, mortalities and injuries and the consequences for the status of ETP species.</p> |

**Score: 85**

**2.3.3 Scoring Rationale:** The information is based on interviews conducted with fishermen during the assessment visit as well as systematic interviews conducted across the fishery by Shester (2008). This information is sufficient to determine if the fishery may be a threat to ETP species. There is some accurate verifiable information available due to the documented interviews conducted by Shester as part of a larger study (Shester 2008). Therefore all elements of the 80 scoring guideposts are met. In addition the last element of the SG 100 is met warranting a score of 85.

**2.3. 3 Trace References**

Shester (2008)

**2.4.1**

The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function.

| SG 60  | SG 80   | SG 100   |
|--|---|--|
| <p>The fishery is <u>unlikely</u> to reduce habitat structure and function to a point where there would be serious or irreversible harm.</p> | <p>The fishery is <u>highly unlikely</u> to reduce habitat structure and function to a point where there would be serious or irreversible harm.</p> | <p>There is <u>evidence</u> that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.</p> |

**Score: 95**

**2.4.1 Scoring Rationale:** Eno *et al.* (2001) described very few direct impacts to benthic habitats associated with the use of traps. They conducted several studies on the effects of lobster and crab pots on different types of habitats. Observations of pots being hauled from a variety of habitat types revealed that the habitats and their communities “appeared relatively unaffected by the fishing activity” (Eno *et al.* 1999). Shester (2008) showed

experimentally that traps have a minimal impact on the associated habitat of the fishery in assessment, that is mainly made up of low relieve sand and cobble with *Eisenia* kelp and gorgonian corals. The majority of hard substrate is covered by coralline red algae. Therefore there is empirical evidence that the fishery is highly *unlikely* to reduce habitat structure and function to a point where there would be serious or irreversible harm. However this study also showed that some (<5% skeletal damage can occur on gorgonian corals when traps are dragged across the seafloor and considerations did not extend beyond the fishing area. Therefore, the score was reduced to 95 for this performance indicator.

#### 2.4.1 Trace References

Eno et al. (2001), Shester (2008)

| 2.4.2  |  |   |
|--|--|---|
| There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types.   |  |   |
| SG 60  | SG 80  | SG 100  |
| <p>There are <u>measures</u> in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.</p> <p>The measures are considered <u>likely</u> to work, based on plausible argument (e.g general experience, theory or comparison with similar fisheries/habitats).</p> | <p>There is a <u>partial strategy</u> in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.</p> <p>There is some <u>objective basis for confidence</u> that the partial strategy will work, based on some information directly about the fishery and/or habitats involved.</p> <p>There is <u>some evidence</u> that the partial strategy is being implemented successfully.</p> | <p>There is a <u>strategy</u> in place for managing the impact of the fishery on habitat types.</p> <p>The strategy is mainly based on information directly about the fishery and/or habitats involved, and testing supports high confidence that the strategy will work.</p> <p>There is <u>clear evidence</u> that the strategy is being implemented successfully, and intended changes are occurring. There is some evidence that the strategy is achieving its objective.</p> |

#### Score: 80

**2.4.2 Scoring Rationale:** Based on the information about the nature and extend of the fishery and the empirical evidence of fishing gear (trap) impacts on habitat (Shester 2008), a strategy would not be deemed necessary for this fishery. However there are several management measures in place to serve multiple purposes (resource conservation, effort control, etc.) that also provide direct protection to habitat. These measures include trap limits, controlled access, and a prohibition on non-trap gear.

#### **Trace Reference:**

(Shester 2008)

| 2.4.3   |
|---|
| Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types. |

| SG 60   | SG 80  | SG 100  |
|---|--|---|
| <p>There is a basic understanding of the types and distribution of main habitats in the area of the fishery.</p> <p>Information is adequate to broadly understand the main impacts of gear use on the main habitats, including spatial extent of interaction.</p> | <p>The nature, distribution and vulnerability of all main habitat types in the fishery area are known at a level of detail relevant to the scale and intensity of the fishery.</p> <p>Sufficient data are available to allow the nature of the impacts of the fishery on habitat types to be identified and there is reliable information on the spatial extent, timing and location of use of the fishing gear.</p> <p>Sufficient data continue to be collected to detect any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).</p> | <p>The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types.</p> <p>Changes in habitat distributions over time are measured.</p> <p>The physical impacts of the gear on the habitat types have been quantified fully.</p> |

**Score: 80**

**2.4.3 Scoring Rationale:** The study conducted by Shester (2008) does not cover the whole range of the fishing area to provide information on the nature and distribution of all main habitat types. However there is more than basic information available at the level of detail relevant to the scale and intensity of the fishery. There is sufficient data from his and other studies (cited in 2.4.1) to allow the nature of the impacts of the fishery on habitat types to be identified. There is also reliable information on the spatial extent, timing and location of use of the fishing gear. Therefore the first 2 element of the scoring guidepost 80 are met. However there is no plan to continue collecting data to detect any increase in risk but there is very low likelihood that the risk is going to increase due to the fishing operation or any other factor. Therefore the team concluded that sufficient data on changes of intensity or gear type is collected to detect any increase in risk and scored this performance indicator at 80.

**2.4.3 Trace References**

Shester (2008)

| 2.5.1  |   |  |
|--|---|--|
| The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function.   |   |  |
| SG 60  | SG 80   | SG 100   |
| The fishery is <u>unlikely</u> to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. | The fishery is <u>highly unlikely</u> to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. | There is <u>evidence</u> that the fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. |

**Score: 80**

**2.5.1 Scoring Rationale:** Direct removal of the targeted resource is the only major effect of the fishery on the ecosystem. Due to the known harvest rate, the impact of lobster removals on the ecosystem structure and function, as well as community composition and biodiversity, is considered low. In addition, modelling of the

rocky coastal ecosystem in Bahia Tortugas, Mexico, using Ecopath software, suggests that even for the exploited lobster populations, predation and competition are still stronger stresses than current fishing effort (Morales-Zarate *et al* submitted). Shester (2008) showed evidence that traps have a minimal impact on the associated ecosystem of the fishery. However, because of their role as top predators in the ecosystem, he considered the bycatch of cormorants significant. There is some evidence from interviews with fishermen that these interactions are neither common across the fishery nor throughout the fishing season. Therefore the assessment team considered it highly unlikely that depletion of cormorants could occur due to the fishing activity. While an analysis of existing information suggests that the fishery has very low ecosystem impacts (Shester, 2008), there is a lack of hard evidence on the issue, so the assessment team was unable to justify a higher score.

### 2.5.1 Trace References

Morales-Zarate et al (submitted), Shester (2008)

| 2.5.2   |   |  |
|---|---|--|
| There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function.   |   |  |
| SG 60   | SG 80   | SG 100   |
| <p>There are <u>measures</u> in place, if necessary, that take into account potential impacts of the fishery on key elements of the ecosystem.</p> <p>The measures are considered likely to work, based on <u>plausible argument</u> (eg, general experience, theory or comparison with similar fisheries/ ecosystems).</p> | <p>There is a <u>partial strategy</u> in place, if necessary, that takes into account available information and is expected to restrain impacts of the fishery on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.</p> <p>The partial strategy is considered likely to work, based on <u>plausible argument</u> (eg, general experience, theory or comparison with similar fisheries/ ecosystems).</p> <p>There is <u>some evidence</u> that the measures comprising the partial strategy are being implemented successfully</p> | <p>There is a <u>strategy</u> that consists of a <u>plan</u>, containing measures to address all main impacts of the fishery on the ecosystem, and at least some of these measures are in place. The plan and measures are based on well-understood functional relationships between the fishery and the Components and elements of the ecosystem.</p> <p>This plan provides for development of a full strategy that restrains impacts on the ecosystem to ensure the fishery does not cause serious or irreversible harm.</p> <p>The measures are considered likely to work based on <u>prior experience</u>, plausible argument or <u>information</u> directly from the fishery/ecosystems involved.</p> <p>There is <u>evidence</u> that the measures are being implemented successfully.</p> |

### Score: 80

**2.5.2 Scoring Rationale:** As noted in the previous section, an analysis of available information indicates that the fishery has low impact on the ecosystem (Shester, 2008). In addition, Shester (2008) showed evidence that traps have a minimal impact on the associated ecosystem. The existing strategies through the low impact gear type, prohibition of other gear types, protection of biomass of the target species, protection of ETP (Endangered, threatened and protected) species all indirectly ensure that the fishery will have minimal impacts on the ecosystem. However there is no formal or comprehensive strategy for protection ecosystem function.

## 2.5.2 Trace References

Shester (2008)

| 2.5.3   |  |  |
|---|--|--|
| There is adequate knowledge of the impacts of the fishery on the ecosystem.   |  |  |
| SG 60   | SG 80  | SG 100   |
| <p>Information is adequate to <u>identify</u> the key elements of the ecosystem (e.g. trophic structure and function, community composition, productivity pattern and biodiversity).</p> <p>Main impacts of the fishery on these key ecosystem elements can be inferred from existing information, but <u>have not been investigated in detail</u>.</p> | <p>Information is adequate to <u>broadly understand the functions</u> of the key elements of the ecosystem.</p> <p>Main impacts of the fishery on these key ecosystem elements can be inferred from existing information, but <u>may not have been investigated in detail</u>.</p> <p>The main functions of the Components (i.e. target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are <u>known</u>.</p> <p>Sufficient information is available on the impacts of the fishery on these Components to allow some of the main consequences for the ecosystem to be inferred.</p> <p>Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).</p> | <p>Information is adequate to <u>broadly understand the key elements</u> of the ecosystem.</p> <p>Main <u>interactions</u> between the fishery and these ecosystem elements can be inferred from existing information, and <u>have been investigated</u>.</p> <p>The impacts of the fishery on target, Bycatch, Retained and ETP species and Habitats are identified and the main functions of these Components in the ecosystem are <u>understood</u>.</p> <p>Sufficient information is available on the impacts of the fishery on the Components <u>and elements</u> to allow the main consequences for the ecosystem to be inferred.</p> <p>Information is sufficient to support the development of strategies to manage ecosystem impacts.</p> |

### Score: 70

**2.5.3 Scoring Rationale:** There are appropriate studies in the UK (Eno *et al.* 2001) and in the local area of the fishery, that show that trap fisheries have minor impacts on the ecosystem (Shester 2008). Traps are among the least impacting gear on both the habitat and other species. As stated previously, the modelling of the rocky coastal ecosystem, suggests that even for exploited lobster populations, predation and competition are stronger stresses than current fishing effort (Morales-Zarate *et al.* submitted). Without sufficient understanding of the total mortality of Cormorants taken as bycatch across the fishery, and information about the status of the population, (see PI 2.2.1) the overall severity cannot be determined.

## 2.5.3 Trace References

Eno et al. (2001), Shester (2008).

**Condition 2.5.3:** By the second surveillance audit, provide information on the impact of the fishery on ecosystem components like the Cormorant taken as bycatch in the California Spiny Lobster Fishery. This could include data from the reporting system for bycatch (see condition 2.2.3).

### 11.3 MSC Principle 3

**The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.**

| 3.1.1   |  |   |
|---|--|---|
| <p>The management system exists within an appropriate and effective legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> <li>- Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2;</li> <li>- Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</li> </ul> <p>Incorporates an appropriate dispute resolution framework.</p>  |  |   |
| SG 60   | SG 80  | SG 100  |
| <p>The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2.</p> <p>The management system incorporates or is subject by law to a <u>mechanism</u> for the resolution of legal disputes arising within the system.</p> <p>Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.</p> <p>The management system has a mechanism to <u>generally respect</u> the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p> | <p>The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2.</p> <p>The management system incorporates or is subject by law to a <u>transparent mechanism</u> for the resolution of legal disputes which is <u>considered to be effective</u> in dealing with most issues and that is appropriate to the context of the fishery.</p> <p>The management system or fishery is attempting to comply in a timely fashion with binding judicial decisions arising from any legal challenges.</p> <p>The management system has a mechanism to <u>observe</u> the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p> | <p>The management system incorporates or is subject by law to a <u>transparent mechanism</u> for the resolution of legal disputes that is appropriate to the context of the fishery and has been <u>tested and proven to be effective</u>.</p> <p>The management system or fishery acts proactively to avoid legal disputes or rapidly implements binding judicial decisions arising from legal challenges.</p> <p>The management system has a mechanism to <u>formally commit</u> to the legal rights created explicitly or established by custom on people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p> |

**Score: 95**

**3.1.1 Scoring Rationale:** Fisheries are a federal matter, and the new “Ley general de pesca y acuicultura sustentables/General Law for sustainable fishing and aquaculture” (LGPAS 2007) is the highest legal framework. It contains specific and explicit provisions to deal with the requirements of Principle 3.

The purpose of the law is defined in its Article 1 as:

*... regulating, promoting and managing the use of fishery and aquaculture resources ... establishing the basis for the exercise of those attributions of the federation, states and municipalities, under the overarching principles of concurrence and with the participation of fishers ... with the purpose of promoting the integral and sustainable development of fisheries and aquaculture.*

Regarding being capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; the objectives of the law (as declared in its Article 2) include:

*III. Establishing the basis for the ordination, conservation, protection, repopulation and sustainable utilization of fisheries and aquaculture resources, as well as the protection and rehabilitation of those ecosystems in which these resources are.*

Under the general law, that is a matter of the legislature, there is a “Reglamento de la ley” (Regulations of the law), decreed by the President of the Republic.

Another general law relevant for fisheries is the “Ley General del Equilibrio Ecológico y la Protección del Ambiente”/General law for the ecological equilibrium and the protection to environment” (LGEEPA 1988). This one is particularly relevant because most of the fishery takes place within coastal areas of the “Reserva de la Biosfera del Vizcaino” (Vizcaino biosphere reserve) and the “Reserva de la Biosfera de Isla de Guadalupe”(Guadalupe Island biosphere reserve), both decreed as natural reserves. The “Secretaría del Medio Ambiente y Recursos Naturales” (SEMARNAT, the Secretariat for Environment and Natural Resources) being the highest executive branch of the general law, while the “Comisión Nacional de Areas Naturales Protegidas” (CONANP, National Commission for Natural Protected Areas) is mostly related to the natural reserves.

In its Chapter 1, it states the objectives of the law as:

- III. The preservation, restoration and improvement of the environment;*
- IV. The preservation and protection of biodiversity, as well as the establishment and management of natural protected areas*
- V. The sustainable use, preservation and, in due course, restoration of soil, water and the other natural resources, in such a way that they are compatible with the generation of economic benefits and societal activities and the protection of ecosystems*

The law is particularly apt in the ecological ordering (as stated in its 5<sup>th</sup> Article):

- IX. The formulation, application and evaluation of the ecological ordering programs ... and those of marine ecological ordering...*
- XI. The regulation of the sustainable use, protection and preservation of national waters, its biodiversity, fauna and other natural resources...*

Further, the “Reglamento de la Ley General del Equilibrio Ecológico y la Protección al Ambiente en Materia de Areas Naturales Protegidas” (Regulation for the General Law for the ecological equilibrium

and the protection to environment), decreed during 2000 and updated during 2004 stated further provisions regarding the utilization of natural resources within the natural protected areas.

On the other hand, the “*Ley Federal Sobre Metrología y Normalización*” (LFMN, Federal Law on Metrology and Standardization) establishes the procedures for the integration of the “*Normas Oficiales Mexicanas*” (NOMs, Official Mexican Norms), which are specific legal guidelines defined as:

*The technical regulation of compulsory enforcement issued by the competent agencies ... that establish rules, specifications, attributes, directives, characteristics or prescriptions to be followed for a product, installation, system, activity or method of manufacturing or operation, as well as those relative to terminology, symbols, marks and labels...*

In its Article 40, the law states that the NOMs will define

*The characteristics and/or specifications to be met by the products and procedures when they may bear any risk for the safety of people or damage human, animal, vegetal, labor or general environment, or for the preservation of natural resources.*

Regarding the observation of the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; paragraph V in article 2 of the LGPAS states:

*V. To seek the preferential right to access, utilization and benefits of fishery resources to indigenous communities and people ... in those places that they occupy and inhabit.*

As to providing an appropriate dispute resolution framework, there is a full scale judicial system. Sanctions by authorities to particulars for failures to comply with the law and its subsidiaries have to meet the premises in the “*Ley Federal de Procedimiento Administrativo*” (Federal Law of Administrative Procedure)

### 3.1.1 Trace References

LGPA 2007, [www.diputados.gob.mx/LeyesBiblio/pdf/LGPAS.pdf](http://www.diputados.gob.mx/LeyesBiblio/pdf/LGPAS.pdf)

LGEEPA 1988, [www.diputados.gob.mx/LeyesBiblio/pdf/148.pdf](http://www.diputados.gob.mx/LeyesBiblio/pdf/148.pdf)

LFMN, <http://www.diputados.gob.mx/LeyesBiblio/pdf/130.pdf>

Federal Law of Administrative Procedures, <http://www.diputados.gob.mx/LeyesBiblio/pdf/112.pdf>

[http://www.cddhcu.gob.mx/LeyesBiblio/regley/Reg\\_LGEEPA\\_ANP.pdf](http://www.cddhcu.gob.mx/LeyesBiblio/regley/Reg_LGEEPA_ANP.pdf)

### 3.1.2

The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties.

| SG 60  | SG 80  | SG 100   |
|--|--|--|
| Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <u>generally understood</u> . | Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <u>explicitly defined and well understood</u> for <u>key areas</u> of responsibility and interaction. | Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <u>explicitly defined and well understood</u> for <u>all areas</u> of responsibility and interaction. |

|  |   |  |
|--|---|--|
| <p>The management system includes consultation processes that <u>obtain relevant information</u> from the main affected parties, including local knowledge, to inform the management system.</p> | <p>The management system includes consultation processes that <u>regularly seek and accept</u> relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.</p> <p>The consultation process <u>provides opportunity</u> for all interested and affected parties to be involved.</p> | <p>The management system includes consultation processes that <u>regularly seek and accept</u> relevant information, including local knowledge. The management system demonstrates consideration of the information and <u>explains how it is used or not used</u>.</p> <p>The consultation process <u>provides opportunity and encouragement</u> for all interested and affected parties to be involved, and <u>facilitates</u> their effective engagement.</p> |
|--|---|--|

**Score: 85**

**3.1.2 Scoring Rationale:** Functions, rules and responsibilities are clearly and explicitly defined and well understood; consultation processes regularly accept and seek relevant information. There is explanation and consideration of comments in the process of integration of NOMs and in other steps.

There are comprehensive instances at several levels in which matters related to fisheries and aquaculture are dealt with.

As of the writing of this report, the operating Regulations of the LGPAS corresponds to the former law as revised on 28/01/2004; since the new law was published, there was an announcement soliciting comments on the new law sent to all appropriate stakeholders and publically posted that read in part:

*Following the agreement of the Consejo Nacional de Pesca y Acuicultura [described in the following paragraphs] as of July 1<sup>st</sup>, 2009... the last version of the draft Regulation of the General Law of Sustainable Fisheries and Aquaculture is made available to the fisheries and aquaculture sector, as well as to the general public for the purpose of obtaining comments before July 10<sup>th</sup>, 2009...*

Other lower level instances of consultation are the following:

- a. The “Consejo Nacional de Pesca y Acuicultura” (CNPA, National Council for Fisheries and Aquaculture), described in Chapter II of the LGPAS, integrated the representatives of the various related branches of the federal government with social organizations, fishery and aquaculture producers as well as representatives from the appropriate branches in the state governments.
- b. For the first time, the law favors decentralization, by creating the “Consejos Estatales de Pesca y Acuicultura” (CEPA, State Councils for Fisheries and Aquaculture), that may be requested by the CNPA to offer opinions and technical issues prior to any resolution (Article 23).
- c. Scientific research is now given a relevant role; a full Título (major division of the law) is devoted to define it. Further, it considers the participation of the academia. Article 28 defines its main objectives being:
  - I. *To guide the decisions of relevant authorities, as related to conservation, protection, restoration and sustainable utilization of fisheries and aquacultural resources*
  - II. *Increase the capacity to identify, quantify, utilize, manage, transform, conserve and increment fishery and aquaculture species*

- III. *Promote de design of new selective and environmentally safe fishing gear*
  - IV. *Establishing new evaluation procedures to determine the state of the fisheries*
  - V. *Provide knowledge to determine the conditions in which fishing and aquacultural practices should be undertaken to maintain environmental equilibrium*
  - VI. *Develop research on sanitation in fisheries and aquaculture*
  - VII. *Provide knowledge to the establishment of measures to protect overexploited species*
- d. The “Instituto Nacional de Pesca” (INAPESCA, National Fisheries Research Institute) is declared as the administrative organization of the federal government responsible for coordination and guidance of scientific and technological research for matters of fisheries and aquaculture (Article 29); some of its relevant responsibilities being:
- I. *To undertake scientific and technological research in fisheries and aquaculture*
  - II. *Provide with technical and scientific advice for the purposes of management and conservation of fisheries and aquaculture species...*
  - V. *Integrate and update the Carta Nacional Pesquera (National Fisheries Chart) and the Carta Nacional Acuícola (National Aquacultural Chart)...*
  - XV. *Integrate the Management Plans for fisheries and aquaculture*

Particularly regarding the collaboration with other scientific and technological research institutions:

- III. *Coordinate the integration of the “Programa Nacional de Investigación Científica Tecnológica en Pesca y Acuicultura” (National Program for Scientific and Technological Research in Fisheries and Aquaculture), based on the proposals of higher education and research institutions, as well as fishery producers organizations.*
- IV. *Coordinate the integration and functioning of the Red Nacional de Información e Investigación en Pesca y Acuicultura (National Network of Information and Research in Fisheries and Aquaculture) to aid in the collaborative work and optimizing human, financial and infrastructural resources. [The Red Nacional de Información e Investigación en Pesca y Acuicultura (National Network of Information and Research in Fisheries and Aquaculture) was implemented on 11/24/2009].*

Inter institutional cooperation in scientific and technical research is stressed further:

*Article 30. The INAPESCA will have a Scientific and Technical Assessing Committee ... with representatives from the National Network of Information and Research in Fisheries and Aquaculture.*

- e. The procedures for the establishment of NOMs are explicitly defined in the law itself:

In Article 44:

*The federal government agencies are responsible for the elaboration of the first drafts of NOMs and to submit them to the Comités Consultivos Nacionales de Normalización (CCNN, National*

*Consulting Normalization Committees). Other national normalization organisms may also submit first order drafts to the CCNNs. These will, in turn, integrate the second order drafts. They will also search for the existence of similar NOMs, in which case coordination between agencies will be mandatory. Further, they will take in account other national and international norms. The CCNNs will comment the draft within a period not longer than 75 days.*

*The originating agencies will then answer to comments and do the necessary modifications within the following 30 days. The result will then be the Project of NOM, that will be published in the Diario Oficial de la Federación (DOF, Official Federal Government Gazette). This will remain posted for public scrutiny for 60 days during which any interested party may revise the documentation that will be available with the corresponding CCNN and submit any comments or suggestions.*

*The CCNN will analyze the comments and suggestions and, in due course, will modify the project within the following 45 days. Then answers to comments and suggestions will be published in the DOF at least 15 days in advance of the final publication of the NOM.*

The CCNN for the fisheries sector is known as the *Comité Consultivo Nacional de Normalización de Pesca Responsable* (National Consultive Committee for the Normalization of Responsible Fisheries) and is constituted by government officials from the CONAPESCA, the Director General of Norms (Secretariat of Economy), the President of the National Chamber of the Fisheries and Aquaculture Industries, the President of the National Organization of Fisheries Cooperatives, the Chief of Staff of the Navy, the Director General and other officials of Merchant Shipping (Secretariat of Communications and Transportation), representatives from the Secretariat of Public Health and Secretariat of Tourism; the Director of the Institute of Marine Sciences of the National Autonomous University of Mexico, a representative from the National Waters Commission, the Undersecretary of the Secretariat of the Environment and Natural Resources, the regional Directors of INAPESCA, the Director General of the *Procuraduría de la Defensa del Ambiente* (Attorney for the Defense of Environment), representatives from the net manufacturing industry, marine equipment and cables industry, as well as the Director of INAPESCA and the *Colegio de Profesionales de la Pesca* (Association of Fisheries Professionals).

### 3.1.2 Trace References

Red Nacional de Información e Investigación en Pesca y Acuicultura,

[www.conapesca.sagarpa.gob.mx/wb/cona/boletin\\_no\\_59](http://www.conapesca.sagarpa.gob.mx/wb/cona/boletin_no_59)

Reglamento de la Ley Pesca, 2004, [http://www.diputados.gob.mx/LeyesBiblio/regley/Reg\\_LPesca.pdf](http://www.diputados.gob.mx/LeyesBiblio/regley/Reg_LPesca.pdf)

Regulation of the General Law on Sustainable Fisheries and Aquaculture (Draft)

<http://www.sagarpa.gob.mx/saladeprensa/Paginas/ForoReglamentodePesca.aspx>

### 3.1.3

The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach.

| SG 60  | SG 80   | SG 100  |
|--|---|---|
| Long-term objectives to guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are <u>implicit</u> within management policy. | <u>Clear</u> long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are <u>explicit</u> within management policy. | <u>Clear</u> long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are <u>explicit</u> within <u>and required by</u> management policy |

**Score: 100**

**3.1.3 Scoring Rationale:** The major law, LGPAS, defines as one of its prime objectives:

*III. Establishing the basis for the ordination, conservation, protection, repopulation y sustainable utilization of fisheries and aquaculture resources, as well as the protection and rehabilitation of those ecosystems in which these resources are.*

Further, Mexico is a signatory of the FAO Code of Conduct for Responsible Fisheries and compliance with its principles is embedded in the Plan Sectorial (SAGARPA 2003). The draft management plan for the fishery incorporates these principles:

*“The Fisheries Management Plan follows the precepts of Article 27 of the Political Constitution of the United Mexican States, the General Law for Sustainable Fisheries and Aquaculture and other subsidiary laws and regulations. It is further a management plan with precautionary approach, agreeing with the Code of Responsible Fisheries, of which Mexico is signatory, and is coherent with the objectives of the Sector Plan for 2001-2006.”*

**3.1.3 Trace References**

LGPA 2007, [www.diputados.gob.mx/LeyesBiblio/pdf/LGPAS.pdf](http://www.diputados.gob.mx/LeyesBiblio/pdf/LGPAS.pdf)

FAO Code of Conduct for Responsible Fisheries,

[http://www.conapesca.sagarpa.gob.mx/wb/cona/cona\\_codigo\\_de\\_conductapescaresp](http://www.conapesca.sagarpa.gob.mx/wb/cona/cona_codigo_de_conductapescaresp)

SAGARPA 2003, <http://www.sagarpa.gob.mx/v1/ganaderia/FTP/Sectorialanexo2.pdf>

**3.1.4**

The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing.

| SG 60  | SG 80   | SG 100  |
|--|---|---|
| The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2. | The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and seeks to ensure that negative incentives do not arise. | The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and <u>explicitly considers</u> incentives in a <u>regular review</u> of management policy or procedures to ensure that they do not contribute to unsustainable fishing practices. |

**Score: 85**

**3.1.4 Scoring Rationale:** There is hard evidence of formal provisions for either economic or social incentives in some instances, such as the case of the fishery for gulf croaker in the northern Gulf of California. None applies specifically to the lobster fishery. There are no subsidies except for the widespread subsidy to fuel for primary level producers, i.e. agriculture and fisheries.

There is a “Programa de Uso Sustentable de Recursos Naturales para la Producción Primaria” (Program for the sustainable utilization of natural resources for primary production) that includes,

*Strategic projects by fishery resource...and fisheries ordination for the sustainable utilization of fisheries, fishing resources...may be regional, state wide or municipal...*

One example of such programs is the "Substitution of fishing gear as a strategy to implement NOM-063-PESC-2005, Responsible fishing of gulf croaker (*Cynoscion othonopterus*) at the northern gulf of California and the Colorado River delta", in which CONAPESCA financed a specific study on gill net selectivity to an outside consultant, developed a training program for fishers and financed the purchasing of nets for them.

### 3.1.4 Trace References

NOM-063-PESC-2005

[http://www.conapesca.sagarpa.gob.mx/work/sites/cona/resources/LocalContent/7309/1/NOM\\_063\\_CUR\\_VINA\\_GOLFINA.pdf](http://www.conapesca.sagarpa.gob.mx/work/sites/cona/resources/LocalContent/7309/1/NOM_063_CUR_VINA_GOLFINA.pdf)

Program for the sustainable utilization of natural resources for primary production, 2009.

| 3.2.1   |   |  |
|---|---|--|
| The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.  |   |  |
| SG 60   | SG 80   | SG 100   |
| Objectives, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <u>implicit</u> within the fishery's management system. | <u>Short and long term objectives</u> , which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <u>explicit</u> within the fishery's management system. | <u>Well defined and measurable short and long term objectives</u> , which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <u>explicit</u> within the fishery's management system. |

**Score: 90**

### 3.2.1 Scoring Rationale:

The lobster fishery is specifically regulated through the **NOM-006-PESC-1993**, originally decreed in 1993, which has been subject to several amendments in 1997, 1998, 2007 and 2009.

The 1993 NOM considered all lobster fisheries, both at the Pacific, Gulf of Mexico and Caribbean areas, established that the then Secretaría de Pesca (*Secretariat of Fisheries, the predecessor of the actual CONAPESCA*)

*... will define the closed and open fishing seasons, on the basis of studies and biological samplings, and will publish them in the Diario Oficial de la Federación (DOF)*

The NOM also established that fishing was only allowed with traps that would permit releasing organisms that didn't reach minimum prescribed sizes, spears and hooks were explicitly forbidden. Further, it declared minimum size limits for each area and warned that the Secretaría de Pesca could eventually modify them as a result of further studies. To monitor sizes, lobsters were enforced to be landed whole.

The 1997 and 1998 amendments to the NOM referred mostly to the lobster fisheries at the Gulf of Mexico and Caribbean, modifying dispositions on fishing gear and minimum size limits.

The 2007 amendment to the NOM included relevant modifications, introducing the utilization of escape windows, standardization of the measuring instrument, establishing the equivalence of tail to carapace length and including further requirements in the completion of fishing logs. It also included the limitation

of the outboard motor power to 115 HP and specified the sizes and constructing materials for traps, enforcing the utilization of biodegradable staples.

Finally, the 2009 amendment to the NOM further detailed the points to be taken in account for the determination of both carapace and tail lengths.

### 3.2.1 Trace References

<http://www.conapesca.sagarpa.gob.mx/work/sites/cona/resources/LocalContent/7309/1/006pesc1993LANGOSTA.pdf>

<http://www.conapesca.sagarpa.gob.mx/work/sites/cona/resources/LocalContent/7309/1/006pesc1993LANGOSTAMODIFICACION97.pdf>

<http://www.conapesca.sagarpa.gob.mx/work/sites/cona/resources/LocalContent/7309/1/006pesc1993LANGOSTARESOLUCION98.pdf>

<http://www.conapesca.sagarpa.gob.mx/work/sites/cona/resources/LocalContent/7309/1/Dofmodifnom006langosta070615.pdf>

[http://www.conapesca.sagarpa.gob.mx/work/sites/cona/resources/LocalContent/7309/1/NOM\\_006\\_1993\\_121009.pdf](http://www.conapesca.sagarpa.gob.mx/work/sites/cona/resources/LocalContent/7309/1/NOM_006_1993_121009.pdf)

### 3.2.2

The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives.

| SG 60   | SG 80   | SG 100  |
|---|---|---|
| <p>There are <u>informal</u> decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</p> <p>Decision-making processes respond to <u>serious issues</u> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take <u>some</u> account of the wider implications of decisions.</p> | <p>There are <u>established</u> decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</p> <p>Decision-making processes respond to <u>serious and other important issues</u> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.</p> <p>Decision-making processes use the precautionary approach and are based on best available information.</p> <p><u>Explanations</u> are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p> | <p>Decision-making processes respond to <u>all issues</u> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.</p> <p>Decision-making processes use the precautionary approach and are based on best available information.</p> <p><u>Formal reporting</u> to all interested stakeholders describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p> |

**Score: 100**

There are established mechanisms of coordination and co-management, facilitating the interplay between fishers and technical personnel of INAPESCA, starting from the collection of data and following up to discussion of research results, where recommendations for management are openly and transparently discussed before their submission to fisheries authorities. One such mechanism is the “*Comité Técnico Consultivo de la Pesquería de Langosta del Pacífico*” (Technical consulting committee for the Pacific lobster fishery), that was created during 1988 and annually organizes the “*Taller Anual de Langosta*” (Annual lobster workshop). Further, there is a “*Subcomité Estatal de Langosta de Baja California Sur*” (Baja California Sur state lobster subcommittee), operating since 2003 in the frame of the “*Consejo Estatal de Pesca y Acuicultura*” (State council for fisheries and aquaculture).

As an example of how the management system responds to issues identified in relevant research, the 2007 modifications to the NOM, as published the DOF, state that:

*In recent years fishers have included the use of escape windows in lobster traps, based on experimental studies undertaken by the CRIP-La Paz (Centro Regional de Investigación Pesquera de La Paz, Regional Center for Fisheries Research in La Paz, a branch of INAPESCA) in coordination with the SSCP (Sociedades Cooperativas de Producción Pesquera, Fishing cooperatives)... for the purposes of improving the selectivity and efficiency of the fishing gear by reducing the number of undersized organisms ... it has been shown that up to 70% of undersized organisms in the traps may escape ... improving the recruitment to the catchable population.*

*Within the subcommittee for lobster in Baja California Sur, the Federation of Fishing Cooperatives requested to CONAPESCA to establish equivalence between carapace and tail length ... that was dealt with at the XI Foro Científico y Taller Sobre Investigación, Evaluación y Manejo de Langostas Espinosas, de La Paz, BCS del 27 al 29 de noviembre del 2005 (Scientific forum and workshop on research, evaluation and management of spiny lobsters at La Paz, November 27-29, 2005) ... and considered technically feasible. Further, stressed in that same meeting that ... there is need to enforce the daily filling of a fishing log per boat ... to be delivered to fishing authorities.*

Among other examples, this one reveals that the established management system responds to all issues in a timely and transparent manner, uses the precautionary approach based on the best available information and formally reports to the stakeholders.

### 3.2.2 Trace References

Modification to NOM 006 (1993)

[http://www.conapesca.sagarpa.gob.mx/work/sites/cona/resources/LocalContent/7309/1/NOM\\_006\\_1993\\_121009.pdf](http://www.conapesca.sagarpa.gob.mx/work/sites/cona/resources/LocalContent/7309/1/NOM_006_1993_121009.pdf)

### 3.2.3

Monitoring, control and surveillance mechanisms ensure the fishery’s management measures are enforced and complied with.

| SG 60   | SG 80   | SG 100  |
|---|---|---|
| Monitoring, control and surveillance <u>mechanisms</u> exist, are implemented in the fishery under assessment and there is a reasonable expectation that they are | A monitoring, control and surveillance <u>system</u> has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies | A <u>comprehensive</u> monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated a consistent ability to enforce relevant management measures, strategies |

|   |   |  |
|---|---|--|
| <p>effective.</p> <p>Sanctions to deal with non-compliance exist and there is some evidence that they are applied.</p> <p>Fishers are <u>generally thought</u> to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.</p> | <p>and/or rules.</p> <p>Sanctions to deal with non-compliance exist, <u>are consistently applied</u> and thought to provide effective deterrence.</p> <p><u>Some evidence exists</u> to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.</p> <p>There is no evidence of systematic non-compliance.</p> | <p>and/or rules.</p> <p>Sanctions to deal with non-compliance exist, are consistently applied and <u>demonstrably provide</u> effective deterrence.</p> <p>There is a <u>high degree of confidence</u> that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.</p> |
|---|---|--|

**Score: 90**

**3.2.3 Scoring Rationale:** The concessions systems give access rights to a geographical area for each of the cooperatives. Authorities follow the performance of the fishery based on the cooperatives Annual Harvesting Program (see also Section 6.4 of the report), where each fishing cooperative has to submit an annual report of exploitation, including projected monthly catch, as well as number of boats and traps to be used. The fishing authority (CONAPESCA), based on the results of specific monitoring programs, either accepts the proposal or issues a recommendation for the maximum effort to apply.

There is effective monitoring of each lobster landing trip. Lobsters are individually measured and undersized animals are returned to the sea. A fishing log is filled out for each trip and submitted to the fishing authorities.

There is regular verification of catches and procedures at landing sites by CONAPESCA personnel, as well as verification of the boats and outboard engines power, traps and sizing instruments. Further, there is regular verification of the fishing logs information as contrasted with the registered landings. There is no evidence of systematic non-compliance.

There is formal evidence that there is a monitoring system that can be inspected by fishers and other persons seeking for evidence of compliance. Official information, provided by the Delegacion de Pesca (the fisheries delegation), shows the inspections which resulted in effectively retaining fisheries products (mostly lobsters, but also sea cucumber, clams, abalone) and/or fishing boats, vehicles, etc. For example during 2010, 12 seizures were reported. Altogether, 44,064 kg of fisheries products were seized, together with 935 pieces (not included in the weight), 1 fishing boat, 20 fishing traps and 4 vehicles. As a result of these actions, 13 persons were sent to the judicial system. The official document shows the number of the acta, the date and place of the seizure, the individual or enterprise that conducted the inspection, the inspecting officer and the product and/or fishing boats and vehicles, their numbers or weight and those individuals who were forwarded to the judicial system.

Therefore all elements of the 80 scoring guideposts are met. In addition to all elements of the SG80, the second and third element of the SG 100 are met and the fishery was scored at 90.

**3.2.3 Trace References**

Regulation of the Fishing Law:

Fishing log

| 3.2.4   |  |   |
|---|--|---|
| The fishery has a research plan that addresses the information needs of management.   |  |   |
| SG 60   | SG 80  | SG 100  |
| Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2. Research results are <u>available</u> to interested parties. | A <u>research plan</u> provides the management system with a strategic approach to research and <u>reliable and timely information</u> sufficient to achieve the objectives consistent with MSC's Principles 1 and 2. Research results are <u>disseminated</u> to all interested parties in a <u>timely</u> fashion. | A <u>comprehensive research plan</u> provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and <u>reliable and timely information</u> sufficient to achieve the objectives consistent with MSC's Principles 1 and 2. Research <u>plan</u> and results are <u>disseminated</u> to all interested parties in a <u>timely</u> fashion and are <u>widely and publicly available</u> . |

**Score: 90**

**3.2.4 Scoring Rationale:** There is a long term specific research plan by INAPESCA, yearly programs are submitted by the La Paz and Ensenada CRIPs. These programs focus on the lobster populations and fishery, as well as its relations to environment.

A long list of specific projects that have been undertaken by the INAPESCA and a number of academic institutions starting during the early 1960s have resulted in continuous and effective monitoring of the fishery, including landings, composition of catch, effort, etc.; space-temporal follow up of reproduction and its relation to environmental factors. Tagging projects have been used to improve growth estimates, as well as migratory patterns. Selectivity studies were the basis for the introduction of escape windows. Larval recruitment studies began during 1997 and have continued since. Genetic research has permitted defining stocks. Along recent years intensive research has been conducted on the lobster ecosystem.

Academic institutions involved have included national CICIMAR, CIBNOR, CICESE, the Escuela Nacional de Ciencias Biológicas del IPN (ENCB) and foreign universities like Stanford University, etc.

**3.2.4 Trace References**

Vega (2008); Vega (2010)

| 3.2.5  |  |   |
|--|--|---|
| There is a system for monitoring and evaluating the performance of the fishery-specific management system against its objectives.<br>There is effective and timely review of the fishery-specific management system. |  |   |
| SG 60  | SG 80  | SG 100  |
| The fishery has in place mechanisms to evaluate <u>some</u> parts of the management system and is subject to   | The fishery has in place mechanisms to evaluate <u>key parts</u> of the management system and is subject to <u>regular internal</u> and <u>occasional external</u> review. | The fishery has in place mechanisms to evaluate <u>all</u> parts of the management system and is subject to <u>regular internal</u> and |

|                                    |  |                         |
|------------------------------------|--|-------------------------|
| <u>occasional internal review.</u> |  | <u>external review.</u> |
|------------------------------------|--|-------------------------|

**Score: 85**

**3.2.5 Scoring Rationale:** There is internal review of the management system at various levels, including the INAPESCA and CONAPESCA internal reviews. Further, the INAPESCA itself was reviewed by FAO in 2005 (Csirke J, et al, 2005)

**3.2.5 Trace References**

Csirke J, et al (2005)

## 12. ACTION PLAN FOR MEETING CONDITIONS

The Client for this fishery assessment and certification has submitted an Action Plan for meeting all conditions and requirements under the MSC program.

### ACTION PLAN FOR MEETING THE CONDITIONS FOR CONTINUED CERTIFICATION

FEDECOOP updated March, 2010

| <b>Action Plan 1.2.4</b>   |  |                     |                            |
|--|--|---------------------|----------------------------|
| Conditional Requirement  | Action   | By whom             | Period                     |
| <p>By the first annual surveillance audit the client shall provide evidence that the stock assessment has been modified to be more appropriate for the stock. The client shall consider using a model that accurately represents the biology of the resources and which better represents the uncertainties in the parameters estimations and includes the Guadalupe Island fishery information. In addition provide some evidence to the CB that the stock assessment has been peer reviewed either internally or externally.</p> | <p>Client will request from INAPESCA to perform stock assessment using a size-structured model including uncertainty estimations for its parameters (see Appendix II for details).</p> <p>Catch and effort data from the Guadalupe Island fishery will also be requested from INAPESCA to be incorporated in the stock assessment process.</p> <p>The National Commission of Protected Areas (CONANP) will support a research and monitoring program that amongst other things will generate basic scientific information for the lobster fishery around Guadalupe Island.</p> | FEDECOOP – INAPESCA | December 2011 – March 2012 |
| <p>By the second annual surveillance audit, provide some evidences that the post-release mortality of the sublegal size California spiny lobster has been assess and incorporated in the assessment process.</p>   | <p>Information of the sublegal lobster caught and released during the fishing operations will be recorded in the fishing logbooks by the Client including any mortality, and the Client will request to INAPESCA that post-release mortalities are evaluated and incorporated in the stock assessment process.</p>   | FEDECOOP - INAPESCA | December 2012 – March 2013 |

| <b>Action Plan 2.2.1</b>   |   |          |                    |
|--|---|----------|--------------------|
| Conditional Requirement  | Action  | By whom  | Date of completion |
| <p>By the second surveillance audit, the client shall provide details to the CB about the amount and origin of bait species used in the fishery.</p> | <p>The client will introduce fishing logbooks, the source and quantity of bait used during the fishing operations will be recorded, and</p> | FEDECOOP | March 2012         |

|   |   |                 |                   |
|---|---|-----------------|-------------------|
| <p>By the third annual surveillance the client shall provide evidence to the CB that the bait species that are caught locally are highly likely to be within biologically based limits.</p> | <p>summarized in a monthly and seasonal manner (see Appendix II for details).</p> <p>The client will continue to follow the fishing specifications in the Carta Nacional Pesquera for the species used as bait and adopt and respect the official measures provided by the CONAPESCA.</p> | <p>FEDECOOP</p> | <p>March 2013</p> |
|---|---|-----------------|-------------------|

| <b>Action Plan 2.2.2</b>   |  |                                      |                                     |
|--|--|--------------------------------------|-------------------------------------|
| Conditional Requirement  | Action   | By whom                              | Date of completion                  |
| <p>By the third surveillance audit, the client shall provide evidence that main bycatch species including bait species used in the fishery are highly likely to be within biologically based limits, or if outside such limits there develop a partial strategy of demonstrably effective mitigation measures and provide some evidence to the CB that the strategy has been implemented successfully.</p> | <p>Client will adopt and respect the official measures provided for the administration and management of the species that are used as bait in the lobster fishery.</p> <p>Client will work closely with INAPESCA and follow the trend of the population of the bait species. A comparison will be made between the amount of bait used by species (data from new logbooks – see 2.2.3 and 2.2.1) with the total catch of the species in the region</p> | <p>FEDECOOP</p> <p>With INAPESCA</p> | <p>March 2013</p> <p>March 2014</p> |

| <b>Action Plan 2.2.3</b>  |   |                 |                    |
|---|---|-----------------|--------------------|
| Conditional Requirement   | Action  | By whom         | Date of completion |
| <p>By the second surveillance audit, the client shall establish a scientifically defensible monitoring and reporting system for bycatch, including the amount and species that are use for bait, in the California Spiny Lobster Fishery.</p> | <p>The client will record the source and quantity of bait used in the lobster fishery in logbooks specifically designed for this purpose and summarizes the results make monthly and by fishing season (see Appendix II for details).</p> | <p>FEDECOOP</p> | <p>March 2012</p>  |

| <b>Action Plan 2.5.3</b>  |  |         |                    |
|---|--|---------|--------------------|
| Conditional Requirement   | Action   | By whom | Date of completion |
| <p>By the second surveillance audit, provide data from the monitoring and</p> | <p>Client will record the bycatch in the fishing logbook</p> |         |                    |

|  |   |          |            |
|--|---|----------|------------|
| reporting system for bycatch including Cormorants taken in the California Spiny Lobster Fishery. | including cormorants, and produce monthly and seasonal reports (see Appendix II for details). | FEDECOOP | March 2012 |
|--|---|----------|------------|

### **13. PEER REVIEW, PUBLIC COMMENT AND OBJECTIONS**

A peer review has been conducted by two peer reviewers. Their comments and the response to the comments by the team are found in Appendix II. As required, scientists nominated as peer reviewers for this report were posted on the MSC web site for stakeholder comment. Also, a public comment period will be held, as well as a posting period for objections as required by the MSC.

### **14. MSC LOGO LICENSING RESPONSIBILITIES**

As the “applicant” for certification of the fishery, FEDECOOP, is the only entity that has the right to apply for a license to use the MSC logo. It is also the case that Camara Nacional de la Industria Pesquera, Delegacion Sonora has the right to approve the use of the logo for other quota holders in the fishery at its discretion and by a means that is considered fair and equitable (based on MSC requirements). The MSC as the logo license owner has the sole right and responsibility to review and enforce its requirements with regard to the fair and equitable sharing of access to the fishery certificate. SCS as the certification body does not have any obligations to review, approve, or enforce the MSC requirements in this regard.

## 15. REFERENCES

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APPENDIX I – SAMPLE INVOICES FOR BAIT PURCHASE FOR THE FISHERY

**MARCO ANTONIO ROBLES ALVAREZ**  
**PERMISIONARIO DE PESCA**  
 R.F.C. ROAM-671124-NP1  
 CURP-ROAM671124HBSBLR07  
 RAMON BASTIDA No. 15 COL. NUEVA SANTA ROSALIA  
 TEL. 152-15-12 CEL. 155-32-41  
 C.P. 23920 SANTA ROSALIA, BAJA CALIFORNIA SUR

**FACTURA**  
 No. 0442

**FECHA**  
 DIA / MES / AÑO

CLIENTE NOMBRE: [REDACTED]  
 DOMICILIO: [REDACTED] MEDIO DE TRANSPORTE: [REDACTED]  
 LUGAR: BAHIA TORTUGAS, B.C. R.F.C. PPB981215-I5A

| CANTIDAD  | DESCRIPCION                                      | P. UNIT. | IMPORTE |
|---|--|----------|---------|
| 25  | TONELADAS DE SARDINA NO APTA PARA CONSUMO HUMANO |          |         |
|  |  |          |         |
| <b>TOTAL \$</b>   |  |          |         |

**EFFECTOS FISCALES AL PAGO**  
 El Pago de la contraprestación se hace en una sola Exhibición

RECIBI FIRMA AUTORIZADA  
**IMPRENTA HNOS. ZAZUETA**  
 EDUARDO ZAZUETA GONZALEZ  
 R.F.C. ZAGE 551013-QV8  
 Aut.SAT Via Internet 6 Marzo 2002  
 Tel/Fax: 152-07-74 Av. Panitón # 1-B  
 Santa Rosalía, Baja California Sur  
 E-Mail: zazuetas1@prodigy.net.mx

Tiraje del 401 al 450 Fecha de Impresión 22/05/2008  
 Número de Aprobación del Sistema de Control de Impresores Autorizados 14245525  
 Fecha de Vencimiento: 21 de Mayo de 2010

LA REPRODUCCION NO AUTORIZADA DE ESTE COMPROBANTE CONSTITUYE UN DELITO EN LOS TERMINOS DE LAS DISPOSICIONES FISCALES

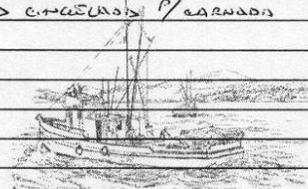
**BRIANDA GUADALUPE REYNOSO ALVAREZ**

R.F.C.: REAB870216LE0 CURP: REAB870216MBCYLRO6  
 MATAMOROS No. 1731-B COL. BUSTAMANTE  
 TEL. 178-47-45 CEL. (646) 193-06-32 ENSENADA, B. C. C.P. 22840  
 CONTRIBUYENTE DE REGIMEN INTERMEDIO

**FACTURA**  
 No. 253

**FECHA**  
 DIA / MES / AÑO

NOMBRE: [REDACTED]  
 DIRECCION: [REDACTED]  
 CIUDAD: BAHIA TORTUGAS B.C. R.F.C. PPB-981215-I5A TEL: [REDACTED]  
 CANT. DESCRIPCION P. UNITARIO IMPORTE

|   |                             |  |  |
|---|-----------------------------|--|--|
| 25.000 kg   | SARDINA CIRCULAR / ENREDADA |  |  |
|  |                             |  |  |
| <b>IMPORTE TOTAL CON LETRA:</b>   |                             |  |  |
| <b>SUB-TOTAL</b>  |                             |  |  |
| 10% I.V.A.  |                             |  |  |
| <b>TOTAL</b>  |                             |  |  |

IMPRESO POR IMPRENTA D GABRIEL / LUIS GABRIEL EVANGELISTA MOLINA / R.F.C. EAM1671120UR9 / CURP: EAM1671120HBCV507 / ENSENADA No. 165-1-ESQ. MATAMOROS FRACC. ULBRICH / TEL. FAX 173-49-37 / ENSENADA, B.C. 22830 / FECHA DE INCLUSION DE LA AUTORIZACION DE LA S.H.C.P. EN LA PAGINA DE INTERNET DEL SAT: MARZO 6 DE 2002 / LA REPRODUCCION NO AUTORIZADA DE ESTE COMPROBANTE CONSTITUYE UN DELITO EN LOS TERMINOS DE LAS DISPOSICIONES FISCALES. "EFFECTOS FISCALES AL PAGO"

NUMERO DE APROBACION DEL SISTEMA DE CONTROL DE IMPRESORES AUTORIZADOS: 17534122 • FECHA: SEPTIEMBRE 2009 EMISION (200) 201-400 VIGENCIA: AGOSTO 2011

**APPENDIX II: MINUTES IF THE SEPTEMBER 24, 2010 MEETING, ENSENADA, BAJA CALIFORNIA AND TRANSLATION OF RELEVANT SECTION**

**MINUTA DE LA REUNIÓN TÉCNICA CELEBRADA EL 24 DE SEPTIEMBRE DE 2010 EN LAS INSTALACIONES DE LA FEDECOOP, UBICADAS EN LA CIUDAD DE ENSENDADA, B. C.**

A las 12.30 pm del día 24 de septiembre de 2010, se reunieron en la sala Presidentes de la FEDECOOP los Asesores técnicos de las Cooperativas: Pescadores Nacionales de Abulón, Buzos y Pescadores, Bahía Tortugas, Emancipación, California de San Ignacio, Leyes de Reforma, Progreso y Punta Abreojos, para analizar y discutir los siguientes puntos:

1. Información complementaria requerida por CONAPESCA para el trámite de Concesión.
2. Situación actual de la pesquería de verdillo en la zona de Punta Abreojos BCS.
3. Análisis y acciones requeridas para cumplir con el plan de acción requerido para la recertificación de la pesquería de langosta.
4. Asuntos Generales.

Una vez analizados y discutidos los 4 puntos de la orden del día se llegaron a los siguientes:

**ACUERDOS**

- I. Con relación a la información complementaria solicitada por la CONAPESCA para renovar los títulos de concesión, se estableció como fecha límite el jueves 30 de septiembre para entregar los formatos CONAPESCA-01-001 y el Anexo 03.
- II. Para el viernes 8 de octubre se deberá contar con la documentación que acredite la legal posesión de los equipos declarados en los formatos anteriores, cuidando que la documentación que se presente coincida con las medidas de las lanchas que aparecen en las facturas y certificados de matrícula; Por otra parte que la potencia de los motores coincida con la establecida en los certificados de seguridad.
- III. Una vez cumplido con los requisitos anteriores, la FEDECOOP solicitará a nombre de las Cooperativas filiales las visitas de inspección requeridas ante las Subdelegaciones de Pesca; posteriormente la documentación exhibida ante los oficiales de pesca deberá ser remitida a la CONAPESCA en copias cotejadas.
- IV. Respecto a la presentación realizada por la asesoría técnica de la Cooperativa Punta Abreojos, respecto a la situación de la pesquería de verdillo, con base a la información presentada se concluye que durante los meses de verano se presenta agregaciones reproductivas, que los hacen más vulnerables a las capturas, que su talla de reclutamiento reproductor es alcanzado a los 28 cm de longitud total, misma que es alcanzado entre los 3 y 4 años de edad.
- V. Con base a la información antes mencionada, se recomienda no utilizar para la captura de especies de escama la trampa de alambre elaborada con una abertura de malla de 1 x 1" pulgada, por considerar que con este arte de pesca se capturan gran cantidad de organismos que no han alcanzado la talla de primera madurez sexual, lo cual pone en riesgo la pesquería de este recurso en el mediano y largo plazo, la cual puede ser una fuente de ingresos alternativos ante los problemas que se presentan actualmente con el recurso abulón; por lo que se recomienda utilizar solo la trampa fabricada con alambre de 2 x 2" pulgadas y en caso de que se cuente con trampas de 1 x 1" se recomienda acondicionarlas con ventanas de escape que permitan tener la mayor cantidad de aberturas posible de 2 x 2".

**VI. Para poder cumplir con las condicionantes establecidas en el documento de la recertificación de la pesquería de langosta deberán realizarse las siguientes acciones:**

1.- Solicitar al INAPESCA que para diciembre de 2010 actualice la evaluación del modelo de stock reclutamiento presentado en la auditoria del año 2000, así como la inclusión de la incertidumbre en la estimación de los parámetros.

2.- Para evaluar la mortalidad de tallas sublegales, se revisará que los pescadores llenen el apartado de las observaciones en el cual se solicita que se registre diariamente la cantidad de langosta con mocha, al final de cada mes, el técnico responsable recabará la información de las bitácoras y realizará un muestreo de tallas, con la finalidad de poder realizar una estimación del peso total de langostas, finalmente llevará un registro y reportará la producción mensual de langosta mocha en número y biomasa.

3.- Se deberá llevar un registro de las cantidades de cada especie y su origen (compra a terceros o captura local) que se están utilizando como carnada, para lo cual cada técnico establecerá el formato que mejor se le acomode de acuerdo con las condiciones de cada Cooperativa, estableciéndose que mensualmente deberá reportar la carnada total utilizada de cada especie.

4.- Se requiere de llevar un registro de la totalidad de especies que están siendo capturadas incidentalmente en las trampas de langosta, incluidos peces, tiburones y cormoranes (patos buzos), los cuales pueden ser anotados en el renglón de observaciones o destinar un formato exclusivo para tal efecto, al final de cada mes el técnico responsable deberá reportar la cantidad de especies capturadas como pesca incidental.

No habiendo otro asunto que tratar se dio por concluida la reunión a las 19.30 horas del 24 de septiembre.

**Translation of relevant section**

VI. To meet the conditions set out in the document of the recertification of the lobster fishery should be the following:

1. The FEDECOOP will require INAPESCA to provide the update stock assessment model in December 2010 that was presented for the audit in 2000, and the inclusion of uncertainty in the estimation of parameters.

2. To assess mortality at sublegal size, fishermen will be monitored to fill in the comments section to record daily the amount of lobster without legs (due to predation in the traps). At the end of each month, the technician will collect information of the logs and perform a sample of sizes, in order to estimate the total weight of lobsters, finally keep a record and report monthly production of lobster without legs in number and biomass.

3. The quantities of each species and its origin (third party purchases or local capture) that are being used as bait shall be recorded. Each technician will establish the format that best suits the conditions of each cooperative, establishing that the total of each species used as bait must be reported monthly.

4. It is required to keep records of all species being caught incidentally in lobster traps, including fish, sharks and cormorants (diving ducks), they can be either recorded as part of the comments section on the excising logbooks or assign a new form specially developed for that purpose. At the end of each month the technician must report the number of species caught as bycatch.

### APPENDIX III– PEER REVIEW COMMENTS AND TEAM RESPONSES

SCS would like to thank the two peer reviewers for a thorough review of this report. All comments and edits have been addressed from their reviews. As a note on logistics, many of the peer reviewer comments were embedded into an earlier version of the report. In such cases, SCS has included the original text from the report in quotations. Where additional wording may have been required for context, SCS has included brackets around the additional text. Quotes from the MSC or from outside sources are italicized. Assessment Team responses are found under each tabulated comment in red font.

#### Peer Reviewer General Comments

|                  |  |
|------------------|--|
| General Comments |  |
| Peer Reviewer 1  | No comment received.   |
| Peer Reviewer 2  | <p>I consider the report to be generally well considered and the Assessment Team has carried out their duties in a very professional way.</p> <p>Most of my comments are in relation the appropriateness of the evaluation and scores against a few of the performance indicators and to readability of the Report. The comments are made directly onto the text (marked in track change mode). Where I have not made any specific comment indicates that I support both the evaluation and score against the performance indicator.</p> <p>Overall I support the recommendations of the Assessment Team. However, in finalizing the report I suggest the authors consider my comments below and other comments, suggestions or questions marked on the Assessment Report.</p> |
| Team Response    | All comments written into the body of the report have been appended in the following tables under the appropriate sections.  |

|                           |  |
|---------------------------|--|
| General Comments: Clarity |  |
| Peer Reviewer 1           | [Various minor edits to verb usage, capitalizations and phrasing throughout the report]  |
| Peer Reviewer 2           | <p>There is a problem with clarity. From Page 11 -40 much of the text was obviously written in Spanish and then translated to English. The language command is still set on Spanish (International).</p> <p>This has cause a number of problems. I have marked all those that I have identified, using track-changes. However, all of this section needs to be carefully re-examined as although I have made numerous suggestions as to suitable re-wording, a few sections were beyond my comprehension and these are clearly marked.</p> |
| Team Response             | All edits have been considered in the Public Comment Draft version of this report.   |

## Peer Reviewer Comments on Body of Report

|                                       |                        |
|---------------------------------------|------------------------|
| 1. INTRODUCTION [and general comment] |                        |
| Peer Reviewer 1                       | This chapter is clear. |
| Peer Reviewer 2                       | No comment received.   |
| <b>Team Response</b>                  | <b>Many thanks.</b>    |

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| 2. SUMMARY           |   |
| Peer Reviewer 1      | This chapter is generally clear. The timeline recounted from start November 2009 to peer review September 2010 seems very short and becomes clear why later when it's noted the process is a recertification. Would help to note that in the beginning. |
| Peer Reviewer 2      | No comment received.  |
| <b>Team Response</b> | <b>Amended to be clear that the fishery was first certified in April 2004 and entered re-assessment in May 2009.</b>  |

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| 3. BACKGROUND TO THE REPORT |   |
| Peer Reviewer 1             | This chapter is clear in focus and information given.<br><br>INAPESCA and SEPESCA are not in the abbreviations list |
| Peer Reviewer 2             | No comment received.  |
| <b>Team Response</b>        | <b>The list is amended.</b>   |

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| 4. CALIFORNIA SPINY LOBSTER FISHERY IN MEXICO |   |
| Peer Reviewer 1                               | A better map than used in Fig. 1 would help given reference to many other coastal locales and islands than actually shown.<br><br>Figure 1: BC should be BCN in map? Also this map does not make clear the "fourth zone" referred to.<br><br>4.3 Where is "Biscayne Bay"? A better map than shown in fig. 1 would be helpful to locate some of these places. Is "Biscayne Bay" = "B. Viscaino"? |
| Peer Reviewer 2                               | 4.4 Some of this duplicates statements on the previous page.  |
| <b>Team Response</b>                          | <b>Yes this was a typo and has been corrected. In addition a better Figure 1 has been included in the report.</b>   |

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| 5. FISHERY AND MANAGEMENT SYSTEM |  |
| Peer Reviewer 1                  | This chapter needs some work to correct mistakes and clarify text. Writing and sentence structure needs to be improved a bit in this and other chapters. |
| Peer Reviewer 2                  | No comments received.  |
| <b>Team Response</b>             | <b>All edits have been taken into consideration.</b>   |

| 5.1 Evolution of the fishery |   |
|------------------------------|---|
| Peer Reviewer 1              | <p>Comment is made to “stepped closures” and refers to fig 1 and table 1...no such information shown. Table 1 is a list of attendees.</p> <p>Fig 2 legend reads “traps per day”...is that true, or is it an annual total since the text speaks of “trap-days” that I interpret to be traps per day across the annual fishing seasons.</p> |
| Peer Reviewer 2              | <p>[please clarify] “concession of fishing rights” [in paragraph 3]</p> <p>“1,624 t in the 2000-2001 season and stabilizing to a level around 1,400 t in the last five seasons (2005-2010).” THIS DOES NOT MATCH WELL WITH THE DATA IN FIGURE 2.</p> <p>[Figure 2 legend is] OUT OF PLACE</p>   |
| Team Response                | <p>The term trap per day was changed to trap-hauls, which better specifies the effort amount used. Legend in <b>Figure 2</b> was edited and includes the type of symbol for each variable to avoid confusion. For catches, bars were used and show the trends described originally. Reference to Table 1 has been removed.</p>            |

| 5.2 Management system |  |
|-----------------------|--|
| Peer Reviewer 1       | <p>does the Vizcaino biosphere reserve refer to “Biscayne Bay” in the last paragraph of [section 4.3]</p> <p>Reference (CNP, National Fisheries Chart) should be Chart or Charter?</p> |
| Peer Reviewer 2       | <p>In the last sentence of the rational, what is the meaning of frame?</p>   |
| Team Response         | <p>See response above for section 4, it was a typo and has been corrected.</p>   |

| 5.3 Stock assessment and Reference Points |  |
|---|--|
| Peer Reviewer 1                           | <p>Not sure what “assessed the fishery” means...recruitment in the context of models and physical variables like SST?</p> <p>First paragraph is a bit confusing by the end. Landings of fig 2 seem to about 10% of total estimated population biomass of about 14,000t? “...the stock is over its optimum level”? Seems that harvest is well under MSY.</p> <p>“...a stock with a value <math>&lt;1</math> of <math>B/B_{MSY}</math> will be considered under is optimum level, while a fishery with a value of <math>&gt;1</math> will be considered over its optimum with a potential of <i>development</i>, or if <math>=1</math> the fishery will be in optimum level.”</p> <p>Is it a potential of “development” or depletion?</p> <p>“They found that current biomass (B, 14,120 t) in the last five seasons compared with <math>B_{MSY}</math> (9,402 t) is 1.5 larger, meaning that the stock is over its optimum level.”</p> <p>Is this the same as 15,000t “fishable biomass” referred to in [section] 6. FISHERY IMPACT ON ECOSYSTEM?</p> |
| Peer Reviewer 2                           | <p>No comments received.</p>   |

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| Team Response | The text in Section 0 was changed following reviewer recommendations, and the first paragraph was revised to avoid confusion. |
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| 5.4 Harvest Strategies and Tactics |  |
| Peer Reviewer 1                    | <p>Is the “Management Plan” different than all the management details given in 5.2? Is it a revision of one now in place?</p> <p>What has been the recent ex-vessel value per kg.?</p> <p>“This system represents a high cost of around \$ 2.5 million dollars per year for operation and an <i>inversion</i> cost of around \$ 1.5 million dollars for communication equipment, vehicles, boats, etc. to all the cooperatives.”</p> <p>[Cost is] for all 10 coops together, or each?</p> <p><i>Inversion</i> costs or investment costs?</p> |
| Peer Reviewer 2                    | No comments received.  |
| Team Response                      | Yes, there is a revision of the Management Plan. The sentence was revised to clarify. A link to the cost of the ex-vessel per kg was included. The recommended wording was used in the same paragraph.   |

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| 6. FISHERY’S IMPACT ON ECOSYSTEM |   |
| Peer Reviewer 1                  | I’m a bit confused about “bycatch” that seems to refer, in part, to bait species used in the pot fishery. Is bait being considered as bycatch or do live individuals actually swim into pots and are caught? Some sections like Trophic relationships are too terse and not very informative. |
| Peer Reviewer 2                  | No comments received.   |
| Team Response                    | Under the guidance 7.2.7 for the FAM (2009), bait should be considered under “bycatch. This is explained later in the report under the bycatch rational.  |

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| 6.1 Ecosystem   |   |
| Peer Reviewer 1 | 2 <sup>nd</sup> paragraph: implication is that lobster recruitment and year class strength is driven by physical forcing rather than any suite of biological interactions. There does not seem to be evidence of this presented and, in fact, this important section (“Ecosystem”) seems very terse.  |
| Peer Reviewer 2 | <p>(Lenarz et al. 1995) NOT IN THE REFERENCES .</p> <p>“However, the author noted that the most significant bycatch in this fishery observed during the study were cormorants (8%)” BECAUSE OF THEIR PIVOTAL ROLE AS TOP PREDATOR OF THE ECOSYSTEM?</p> <p>“Approximately 2.3 to 3.5 kg of bait is used per kg of landed lobster catch, which equates to a total use of 4,500 to 5,000 t of bait in the whole area.” IS THIS AREA OF ASSESSMENT PER SEASON?</p> <p>“Shester (2008) reported that several mollusks were utilized as bait, this is however, no longer occurring.” REPORTED A WHILE AGO!</p> |

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| Team Response | <p>Reviewer 1: The whole section has been revised and more information was added</p> <p>Reviewer 2: reference has been added to reference list</p> <p>The highlighted sections have been clarified. The author (Shester 2008) noted that, because of their important role as top predators in the ecosystem, the most significant bycatch observed were cormorants. A total of 4,500 to 5,000 t of bait is use per season in the whole area. The last sentence was deleted</p> |
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| 6.2 Bycatch – Retained and discard species |  |
| Peer Reviewer 1                            | <p>Not clear what is meant by “Bait that may form part of the bycatch”. Bait used within in the pot to attract lobster, or the same species entering the traps alive?</p> <p>Bycatch statistics are a bit odd...all values are percent of landed lobster <b>weight</b>? Or more likely frequency of occurrence like octopus at 63%?</p> <p>What is the study area of the PhD work relative to the central Baja fishery?</p> <p>Paragraph 3. Several other species are “retained” for bait. I’m not sure what this means; since it comes under bycatch, are these species that enter traps? I suspect that the issue is quantity of bait caught and used in the lobster fishery...make clear.<br/>[Regarding “retained” in the sentence above] not bycatch in the fishery itself?</p> |
| Peer Reviewer 2                            | No comments received.  |
| Team Response                              | <p>This section has been revised to clarify that bait is caught locally and used in the fishery but other bait is also used. According to the guideline 7.2.7 of FAM v2 (2009) bait should be considered under bycatch.</p> <p>The study related to bycatch was conducted in the Punta Abreojos and Bahia Tortugas cooperatives (2 out of 10 cooperatives) within the Vizcaino Desert Biosphere Reserve in the north Pacific region of Baja California Sur, Mexico. During interviews the authors of this PhD chapter confirmed that these areas were representative for the whole fishing areas.</p>  |

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| 6.3.1 Habitat impacts and lost gear |  |
| Peer Reviewer 1                     | <p>Eno et al did work in Europe given title of the report? Should make this clear that is not a direct study of Baja pot impacts but is used as an example.</p> <p>It would be good to have some information about pot design...the biodegradable pot is mentioned in passing, what is it (entire pot of a single panel?). Also, is there an estimate of annual gear lost?</p> <p>Eno et al. is listed as 1996 in the references.</p> <p>“Experimental evidence was provided that crushing occurring when traps fall onto the seafloor has minimal impacts on gorgonian corals.”<br/>[reference?] work by Shester?</p> |
| Peer Reviewer 2                     | [Regarding Eno et al. 1999] THIS STUDY WAS IN THE UK AND WITH DIFFERENT TYPES OF TRAPS. THE RESULTS ARE PROBABLY CORRECT FOR BAJA BUT IT SHOULD SAY SO.  |

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|               | <p>“A review of the potential impacts to habitat from a variety of fishing gear types found that the only indications of adverse impacts to habitat resulting from the use of pots and traps were associated with corals and hard-bottom habitats” WHERE?</p> <p>(Barnette 2001 NOT IN THE REFERENCES).</p> <p>“Ghost fishing mortality through lost lobster traps was estimated to be between 1-2 % of total landed lobster catch annually and has likely been reduced because biodegradable traps were implemented in the fishery in 2007.” REFERENCE?</p> <p>Studies on other spiny lobster fisheries have shown that can easily leave the traps and do so if the bait is exhausted. The previous assessment assumed no mortality from ghost fishing. Where does this new data come from? REFERENCE?</p> |
| Team Response | <p>Reviewer 1: Information, that studies were conducted in the UK on crustacean fisheries, was added. The reference was changed to the more readily available journal article (Eno et al. 2001).</p> <p>Reviewer 2: The study by Barnette (2001) was conducted in Florida, USA, information and references were added into list and in text.</p>  |

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| 6.3.2 Trophic relationships |  |
| Peer Reviewer 1             | This section is so terse and provides almost no information on the subject of “trophic relationships”; no results from Morales-Zarate et al are shown...need to do some work on this section to better support claim that competition and predation are stronger stressors than the fishery. |
| Peer Reviewer 2             | (Morales-Zarate et al submitted)NOT IN THE REFERENCES.   |
| Team Response               | This section has been improved and more details have been added.   |

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| 7. TRACKING AND TRACING OF FISH AND FISH PRODUCTS AND ELIGABILITY DATE |  |
| Peer Reviewer 1  | <p>This chapter needs minor clarification of a point. [The following phrase] doesn’t make sense. “This report acknowledges that sufficient monitoring takes place to identify the fishery of origin for all landed fish via landing slips where the amount of catch and the fishing area are recorded for each set of pots during the fishing trip, and the slips.”</p> <p>“nets” to “pots”?</p> |
| Peer Reviewer 2  | No comments received.  |
| Team Response  | These sentences have been reworded to clarify.   |

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| 8.1 Other Fisheries in the Area Not Subject to Certification |   |
| Peer Reviewer 1  | This chapter is generally clear but see comment below and in the document. Criterion 3 seems to repeat wording of criterion 2 under 8.2.  |
| Peer Reviewer 2  | “Abalone ( <i>Haliotis</i> sp.), caracol (conch shells), algae ( <i>Gelidium</i> sp.), sharks and finfish (approximately 21 species) are taken in the area of the lobster fishery by the members of the |

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|               | Cooperatives.” THESE ARE IMPACTS ON THE ECOSYSTEM   |
| Team Response | In this section all other fisheries are only listed without any judgement about potential impacts on the ecosystem. |

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| 8.4 MSC Principle 2 – Ecosystem |  |
| Peer Reviewer 1                 | This chapter is generally clear but see comment below and in the document. Criterion 3 seems to repeat wording of criterion 2 under 8.2. |
| Peer Reviewer 2                 | No comments received.  |
| Team Response                   | Responded below  |

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| 8.6 Interpretation of MSC Principles for Performance Assessments |   |
| Peer Reviewer 1  | Should read lobster fishery [end paragraph 2] |
| Peer Reviewer 2  | No comments received.                         |
| Team Response  | Corrected                                     |

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| 10. CERTIFICATION RECOMMENDATIONS AND PERFORMANCE SCORES |   |
| Peer Reviewer 1  | Chapter 10: Table 3 lists only 4 conditions and shows a SG 80 for 2.2.3. But the text lists 70 and there is a condition stated as well. |
| Peer Reviewer 2  | No comments received.   |
| Team Response  | The score for PI 2.2.3 is 70 and carries a condition. The table has been amended.   |

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| 10.1 Action Plan for Meeting Conditions |   |
| Peer Reviewer 1                         | The Client actions plans for various conditions are not included and so I presume there is no comment expected from me. |
| Peer Reviewer 2                         | No comments received.   |
| Team Response                           | True. The action plan is finalized before the issuance of the Public Comment Draft version of the report.               |

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| <b>Condition 1.2.4:</b> By the first surveillance audit present results of a stock assessment, using a model that accurately represents the biology of the resources and which better represents the uncertainties in the parameters estimations and includes the Guadalupe Island fishery information. In addition, provide evidence to the CB that the stock assessment has been peer reviewed either internally or externally. By the second surveillance audit, provide some evidence that the post-release mortality of the sublegal size California spiny lobster has been assessed and incorporated in the assessment process. |  |
| Peer Reviewer 1   | No comments received.  |
| Peer Reviewer 2   | [clarification on] “some evidence that the post-release mortality of the sublegal size California spiny lobster has been assessed and incorporated in the assessment process.” |

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| Team Response | The sentence has been reworded to clarify. |
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| <b>Condition 2.2.1</b> By the second surveillance audit, provide some details to the CB about the amount and origin of bait species used in the fishery. By the third annual surveillance provide some evidence to the CB that the bait species that are caught locally are highly likely to be within biologically based limits. |   |
| Peer Reviewer 1   | Bait used can be considered “bycatch?”  |
| Peer Reviewer 2   | No comments received.   |
| Team Response   | As explained above following the guidance of FAM v2 (2009) bait is considered under bycatch for this assessment |

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| <b>Condition 2.5.3:</b> By the second surveillance audit, provide information on the impact of the fishery on ecosystem components like the Cormorant taken as bycatch in the California Spiny Lobster Fishery. This could include data from the reporting system for bycatch (see condition 2.5.2). |   |
| Peer Reviewer 1  | [This condition references condition 2.5.2] Why isn’t there a condition here? |
| Peer Reviewer 2  | No comments received.   |
| Team Response  | This was a typo that now reads “condition 2.2.3.”                             |

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| REFERENCES      |  |
| Peer Reviewer 1 | “Punt, A. (2010) Harvest control rules and fisheries management. In: Grafton, R.Q., Hilborn R., Squires D., Tait M., & Williams A. (2010) Handbook of Marine Fisheries Conservation and Management. Oxford University Press, Oxford, England. 582-294.”<br>Page numbers wrong? |
| Peer Reviewer 2 | No comments received.  |
| Team Response   | Corrected  |

### Peer Reviewer Comments Related to Scores and Rationales

|   |   |
|---|---|
| <i>1.1.1 Stock at level which maintains productivity and has low probability of recruitment overfishing</i> |   |
| Peer Reviewer 1   | Scoring appropriate. Justification seems logical and defensible.<br>“IP” should be “PI”<br>Not sure what is being said in the [last sentence in rational]<br>What is a “trace reference?” |
| Peer Reviewer 2   | No comments received.   |
| Team Response   | Amended. Trace references are the references used when assessment the PI and are described in the paragraph preceding this section. Last sentence has been revised to clarify.            |

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| <i>1.1.2 Limit and target reference points are appropriate for the stock.</i> |   |
| Peer Reviewer 1   | Not sure what the primary differences are between SG 80 compared to 100. I’m not sure that there is sufficient information to judge accuracy of the score relative to the “ecological |

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|                      | role of the stock”. As noted previously, section 6.3.2 provides virtually no information on trophic relationships. However, I think the score is appropriate based on other points in the rationale. |
| Peer Reviewer 2      | No comments received.  |
| <b>Team Response</b> | <b>The ecological role of the stock has to be taken into account just for fisheries that target low trophic level species.</b>   |

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| <i>1.2.1 There is a robust and precautionary harvest strategy in place.</i> |   |
| Peer Reviewer 1   | Scoring appropriate. Justification seems logical and defensible.                        |
| Peer Reviewer 2   | [last two sentences in the rational] clarification on “granted” and “should be granted” |
| <b>Team Response</b>  | <b>Sentence has been revised.</b>   |

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| <i>1.2.2 There are well defined and effective harvest control rules in place.</i> |   |
| Peer Reviewer 1   | The score is appropriate and seemingly could be higher. |
| Peer Reviewer 2   | No comments received.                                   |
| <b>Team Response</b>  | <b>This score has been adjusted.</b>                    |

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| <i>1.2.3 Relevant information is collected to support the harvest strategy.</i> |   |
| Peer Reviewer 1   | Scoring appropriate. Justification seems logical and defensible.<br><br>Why are some words underlined in the Scoring Guideposts? Are they particularly important?   |
| Peer Reviewer 2   | There is some vagueness about the information in the Scoring Rationale.<br><br>The SG 80 calls for “There is good information on all other fishery removals from the stock”. This should include all removals in Mexico and the US. In the previous assessment. It was reported that poaching of the “equivalent of 15% of the legal catch” may occur in the in other areas (implying other Cooperatives . I do not see any mention of such information. All of the Cooperatives are fishing the same stock. It needs a clear statement in the Report regarding illegal fishing of the stock.<br><br>Th SG calls for “there is a good understanding of the inherent <u>uncertainties</u> in the information [data] and the robustness of assessment and management to this uncertainty.” I see no information on uncertainty but it is needed.<br><br>I do not see how the score can be 90.<br><br>[the last sentence in the rational] has awkward wording. |
| <b>Team Response</b>  | <b>This score has been adjusted and the rationale has been duly revised.</b>  |

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| <i>1.2.4 There is an adequate assessment of the stock status.</i> |  |
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| Peer Reviewer 1 | Score and Condition seem appropriate given points raised in the scoring rationale.<br>“During the last stock assessment, Vega et al. (2010) only used a Biomass Dynamic Model that allowed them to evaluate the present status of the stock (as a current biomass B, current F or current f) relative to the reference points ( $B_{MSY}$ , $F_{MSY}$ , and $f_{MSY}$ ).”<br>The current F for current f is not well phrased. |
| Peer Reviewer 2 | “In addition, during the evaluation process we found some information reporting that “the bycatch of sublegal spiny lobster is substantially high (86%) which depending on the post-release mortality could be a concern. (Shester, 2008). Post-release mortality is unknown”<br>[THE ABOVE IS CAUSE FOR CONCERN] !?”   |
| Team Response   | The rationale has been revised to increase clarity.   |

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| 2.1.1 The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species. |  |
| Peer Reviewer 1   | This PI seems to be focused on bycatch since a number of non-target species are listed. But bycatch is explicitly addressed in 2.2.1. Are the “retained” species in this case spiny lobster? Based on information in 6.2, the 100 score seems overly generous.<br><br>Why not group other bycatch species [in 2.2.1] as well?  |
| Peer Reviewer 2   | I cannot support this score of 100. “None of these species are retained for commercial purposes”, is irrelevant. If they are retained for any purpose, including bait, it is important. Later sections also discuss the death of cormorants and seek for more data on this important interaction with the fishery.   |
| Team Response   | The reviewers have misinterpreted the rationale, following the MSC guidance species that are retained because they are of commercial purpose or are required to be retained by management rules should be considered under “retained species”. There are <u>no</u> retained species in this fishery and therefore the team scores this PI at 100 according to guidance 7.2.3 (FAM v.2, 2009). As explained above and in the background of the report, bait is considered under “bycatch (PI 2.2.1-2.2.3). Cormorants are not retained and this interaction is considered under the same bycatch (PIs 2.2.1-2.2.3). |

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| 2.1.2 There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species. |  |
| Peer Reviewer 1   | Scoring appropriate. Justification seems logical and defensible. |
| Peer Reviewer 2   | No comments received.  |
| Team Response   | Thank you  |

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| 2.1.3 Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species. |   |
| Peer Reviewer 1   | Scoring appropriate. Justification seems logical and defensible |

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| Peer Reviewer 2 | No comments received. |
| Team Response   | Thank you             |

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| 2.2.1 The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups. |  |
| Peer Reviewer 1   | <p>This seems the appropriate place to deal with “bycatch” rather than in 2.1.1 that covers “retained” species. The main points leading to low score are not clearly defined: is it the shellfish and finfish groups of the first paragraph, or bait fish used in the pot fishery? The Conditions seems to indicate the latter. It does seem important to have information on population effects caused by harvest of fish used as bait, but it also seems odd to list them as “bycatch”.</p> <p>“The main bycatch species by number and weight are shellfish (63%) and finfish (20%); the estimates derived from 49 observed trips (=4563 traps) Shester (2008).”<br/>Both number and weight are 63%? Odd that each would turn out to be equal.</p> |
| Peer Reviewer 2   | <p>[Question the phrase] majority of crabs were released alive. [and the statement immediately following about cormorants] MAKES NO SENSE.</p> <p>“Therefore it is highly likely that these species are within the biologically based limits.” OF WHAT?</p>  |
| Team Response   | <p>Reviewer 1: 63% and 20% for shellfish and finfish respectively relates to weight only. This has been clarified.</p> <p>Reviewer 2: All bycatch species are considered here, first crabs than cormorants.</p>  |

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| 2.2.2 There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations. |   |
| Peer Reviewer 1   | <p>This condition seems very similar to that for 2.2.1: “provide some evidence that main bycatch species including bait species used in the fishery are highly likely to be within biologically based limits”. Other than mention of cormorants, what is being asked for here that’s different than required for 2.2.1? Otherwise, the scoring seems appropriate.</p>   |
| Peer Reviewer 2   | [Shester (2008) was] A WHILE AGO!   |
| Team Response   | <p>Peer Reviewer 1: This condition is about the existing strategy to manage bycatch and bait species. As explained in the rational, not all bycatch species (e.g. cormorants) are managed and up to 1/3 of bait used may be caught locally and is taken from unmanaged fish stocks. There is no assessment for these bait species and no reference points have been specified. According to the MSC guidelines Policy 17 and FCM 3.4.6 conditions must follow the narrative or metric form of the PIs and SGs used in the assessment tree. PI 2.2.1 and 2.2.2 are closely linked and therefore have some similarity</p> <p>Peer Reviewer 2: This is a PhD thesis and publications are still in preparation.</p> |

2.2.3 Information on the nature and amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch.

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| Peer Reviewer 1 | I continue to read the sequence of PIs from 2.2.1-2.2.3 as overlapping and somewhat redundant; it is not clear what new performance indicators are being addressed across these three topics. I wonder how the set of 70 scores affected the overall score for P2. Otherwise, the scoring seems appropriate given concern in the rationale about too little temporal and spatial data on some bycatch species. |
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[The scoring table lists 80 as the score but it is] 70 in the text.

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| Peer Reviewer 2 | No comments received. |
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| Team Response | All PIs of the new default assessment tree of FAM v2 are pre-determined by the MSC. Under Principle 2 the PIs are grouped into 5 Components (Retained, bycatch, ETP, Habitat and Ecosystem) and each has 3 PIs: 1. Related to the outcome status, 2. management strategy and 3. Information and monitoring. The scoring table in section 10 shows the overall effects of 70 scores on the whole Principle. |
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2.3.1 The fishery meets national and international requirements for protection of ETP species. The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species.

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| Peer Reviewer 1 | Scoring appropriate. Justification seems logical and defensible. |
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| Peer Reviewer 2 | “Since the government of Mexico declared Guadalupe Island a pinniped sanctuary, populations are recovering.” REFERENCE? |
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| Team Response | Thank you<br>Web site link has been included as reference |
|---------------|---|

2.3.2 The fishery has in place precautionary management strategies designed to:

- meet national and international requirements;
- ensure the fishery does not pose a risk of serious or irreversible harm to ETP species;
- ensure the fishery does not hinder recovery of ETP species; and
- minimize mortality of ETP species.

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| Peer Reviewer 1 | Scoring appropriate. Justification seems logical and defensible. |
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| Peer Reviewer 2 | No comments received. |
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| Team Response | Thank you |
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2.3.3 Relevant information is collected to support the management of fishery impacts on ETP species, including:

- information for the development of the management strategy;
- information to assess the effectiveness of the management strategy; and

|   |  |
|---|--|
| - information to determine the outcome status of ETP species. |  |
| Peer Reviewer 1   | Scoring appropriate. Justification seems logical and defensible. |
| Peer Reviewer 2   | No comments received.  |
| <b>Team Response</b>  | <b>Thank you</b>   |

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| 2.4.1 The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function. |  |
| Peer Reviewer 1  | Not sure how the 80 and 100 score really differ; presumably the decision to score at 80 (The fishery is <u>highly unlikely</u> to reduce habitat structure and function to a point where there would be serious or irreversible harm) would be based on some evidence as noted in 100. At any rate, scoring appropriate. Justification seems logical and defensible. |
| Peer Reviewer 2  | No comments received.  |
| <b>Team Response</b>   | <b>Thank you. The wording in the Scoring guideposts (SG) are from the default assessment tree which is a predetermined assessment tree developed by the MSC and part of the new FAM.</b>   |

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| 2.4.2 There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types. |   |
| Peer Reviewer 1  | This score and rationale are a bit odd. On the one hand the rationale notes that “a strategy would not be deemed necessary for this fishery” but a score of 80 is given anyway. |
| Peer Reviewer 2  | No comments received.   |
| <b>Team Response</b>   | <b>Slightly rephrased to justify score</b>  |

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| 2.4.3 Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types. |  |
| Peer Reviewer 1   | Scoring appropriate. Justification seems logical and defensible. |
| Peer Reviewer 2   | No comments received.  |
| <b>Team Response</b>  | <b>Thank you</b>   |

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| 2.5.1 The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function |   |
| Peer Reviewer 1   | Scoring appropriate. Justification seems logical and defensible.  |
| Peer Reviewer 2   | “Direct removal of the targeted resource is the only real effect of the fishery on the ecosystem, however (?), due to the known harvest rate, the impact of these removals on ecosystem trophic structure and function, and on community composition and biodiversity is considered low.” |

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|               | THIS SENTENCE DOES NOT MAKE SENSE. WHERE IS THE ANALYSIS?<br>Morales-Zarate et al submitted (THIS IS NOT IN THE REFERENCES)<br>[Question of] “rational analysis” [in the rationale.] |
| Team Response | Reference has been included in the reference list.   |

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| 2.5.2 There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function. |  |
| Peer Reviewer 1   | Scoring appropriate. Justification seems logical and defensible. But again, the wording of SG80 seems a bit odd. A list of measures are given in the rationale that lead to belief that the fishery doesn't pose a risk to the ecosystem, but there really does not appear to be a “strategy” as worded. |
| Peer Reviewer 2   | “...analysis of available information indicates that the fishery has low impact on the ecosystem.” WHAT ANALYSIS?<br>“ETP” DON'T USE ACRONYMS  |
| Team Response   | Reviewer 1: The wording in the Scoring guideposts (SG) are from the default assessment tree which is a predetermined assessment tree developed by the MSC and part of the new FAM.<br><br>Reviewer 2: Acronyms are explained and listed on page 4 of the report.   |

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| 2.5.3 There is adequate knowledge of the impacts of the fishery on the ecosystem. |   |
| Peer Reviewer 1   | I don't know how PI 2.5.3 and score given can follow from 2.5.1-2. The rationale and condition seem to take us back to bycatch issues of 2.2, the low scores and the conditions imposed there. I think the collection of bycatch issues now carried into one of ecosystem impact is a bit redundant. The condition seems effectively the same as that for 2.2.2. as driven by the rationale for 2.2.1   |
| Peer Reviewer 2   | [Clarify] “common knowledge”<br>See also the comments on 2.5.1 [regarding “rational analysis”]<br>(Morales-Zarate et al submitted) NOT IN THE REFERENCES<br><br>There is common knowledge as well as appropriate studies that show that trap fisheries have minor impacts on the ecosystem. Traps are among the least impacting gear on both the habitat and other species (REFERENCES [for the common knowledge and appropriate studies—also address that the study was done in the UK]).<br><br>I am not certain the score should be as high as 70.   |
| Team Response   | Reviewer 1: The bycatch issues highlight the lack of information particularly about bait species. This PI asks about knowledge and information of all ecosystem impacts including already addresses impact like bycatch/ bait. It is not surprising that if one PI of a different component scores low, the information and knowledge PI of the overall ecosystem component will be affected as well.<br><br>Reviewer 2: “ common knowledge has been deleted to place the emphasis on the studies conducted in the UK and for this specific fishery (Shester 2008). ETP now written in full (it |

is also explained in list of abbreviations), reference added.

3.1.1 The management system exists within an appropriate and effective legal and/or customary framework which ensures that it:

- Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2;
- Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and
- Incorporates an appropriate dispute resolution framework.

Peer Reviewer 1 Scoring appropriate. Justification seems logical and defensible.

Peer Reviewer 2 No comment received

Team Response Thank you

3.1.2 The management system has effective consultation processes that are open to interested and affected parties.

The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties.

Peer Reviewer 1 Scoring appropriate. Given the length of the rationale I'm surprised it's not higher.

Peer Reviewer 2 No comments received.

Team Response *(I ALSO BELIEVE IT IS UNDERSCORED)*, Thank you

3.1.3 The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach.

Peer Reviewer 1 Scoring appropriate. Justification seems logical and defensible.

Peer Reviewer 2 No comments received.

Team Response Thank you

3.1.4 The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing.

Peer Reviewer 1 Scoring appropriate. Justification seems logical and defensible.

Peer Reviewer 2 No comments received.

Team Response Thank you

3.2.1 The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.

Peer Reviewer 1 Scoring appropriate. Justification seems logical and defensible.

Peer Reviewer 2 No comments received.

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| Team Response | Thank you |
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| 3.2.2 The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives. |  |
| Peer Reviewer 1   | Scoring appropriate. Justification seems logical and defensible.   |
| Peer Reviewer 2   | [score 100] highlighted “ <i>Further, there is need to enforce the daily filling of a fishing per boat ... to be delivered to fishing authorities</i> ” [Score appropriate?]   |
| Team Response   | Sorry for that: the italicized part of PR2 comment is really a part of the issue brought up by the Coops as initiative for enforcing the daily filling of a fishing log per boat. It is an example of comments made by the fishers in one of the subcommittee meetings.<br><br>It has been corrected |

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| 3.2.3 Monitoring, control and surveillance mechanisms ensure the fishery’s management measures are enforced and complied with. |  |
| Peer Reviewer 1  | I don’t read any comment in the rationale about “sanctions” that are part of both the SG 80 and 100....”consistently applied and provide effective deterrence”. The score might be fine but it would help to mention nature and implementation of sanctions.   |
| Peer Reviewer 2  | No comments received.  |
| Team Response  | <p>Team Response:</p> <p>Official information translated from the CONAPESCA web page:</p> <p>December 7th, 2010<br/>Mazatlán, Sin. (where CONAPESCA headquarters are located)</p> <p>CONAPESCA completed more than 33 thousand actions of monitoring and surveillance with the purpose of deterring illegal fishing activities.</p> <p>During 2010, 50 million Mex\$ (some 4 million US dollars) were utilized and, up to October, 572 routes have been completed by CONAPESCA, in coordination with the Mexican Navy, both at sea and inner waters.</p> <p>The Director General of Monitoring and Surveillance in CONAPESCA, Rigoberto García Soto, reported that 16,696 terrestrial and 16,318 marine missions, in addition to 2,493 revision sites; 5,444 “actas” (official reports, signed by the authority, the involved individual(s) and witnesses) were completed.</p> <p>Further, 3.53 tons were detained to larger boats, 2.64 tons to smaller boats, 13,175 fishing gears, 193 vehicles, 38 large boats, 491 small boats, 402 outboard engines and 1,614 units of fishing products. A total of 143 individuals were arrested.</p> |
|  | <p>Literature Cited:</p> <p><a href="http://www.conapesca.sagarpa.gob.mx/wb/cona/07_de_diciembre_de_2010_mazatlan_sin1">http://www.conapesca.sagarpa.gob.mx/wb/cona/07_de_diciembre_de_2010_mazatlan_sin1</a></p>  |

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| 3.2.4 The fishery has a research plan that addresses the information needs of management. |  |
| Peer Reviewer 1   | Scoring appropriate. Justification seems logical and defensible. |
| Peer Reviewer 2   | No comments received.  |
| <b>Team Response</b>  | <b>Thank you</b>   |

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| 3.2.5 There is a system for monitoring and evaluating the performance of the fishery-specific management system against its objectives.<br>There is effective and timely review of the fishery-specific management system. |   |
| Peer Reviewer 1  | Scoring appropriate. Justification seems logical and defensible.  |
| Peer Reviewer 2  | “Further, the INAPESCA itself was reviewed by FAO in 2005 (Csirke J, et al, 2005).” BUT WHAT DID IT SAY?  |
| <b>Team Response</b>   | <b>In fact, the INAPESCA has been reviewed by a special project of FAO at two periods, ending in 1991 and in 2005. The revision was extensive, looking at the institution and emphasizing its weaknesses to make appropriate recommendations. The document resulting from the 2005 revision is available at</b><br><br><b><a href="http://www.inapesca.gob.mx/portal/documentos/publicaciones/pelagicos/informe/Informe%20de%20la%20evaluacion%20para%20el%20fortalecimiento%20del%20Inapesca%20de%20Mexico.pdf">http://www.inapesca.gob.mx/portal/documentos/publicaciones/pelagicos/informe/Informe%20de%20la%20evaluacion%20para%20el%20fortalecimiento%20del%20Inapesca%20de%20Mexico.pdf</a></b> |

#### APPENDIX IV- COMMENTS ON NOMINATED PEER REVIEWERS

**From:** Luis Bourillon  
**Sent:** Friday, September 10, 2010 5:09 PM  
**To:** Jason Swecker  
**Cc:** Mario Ramade  
**Subject:** Peer reviewers proposed

Dear Jason,

In relation to your announcement about the proposed peer reviewers for the Draft Assessment Report of the Baja California lobster fishery; my only comment is to avoid having two members of the previous assessment team as per reviewers. I think the best combination is Bruce Phillips and Francisco Arreguin.

Best,

Luis

Dr. Luis Bourillón  
Director de Programa, Arrecife Mesoamericano  
Comunidad y Biodiversidad, A.C. (COBI)

## APPENDIX V: STAKEHOLDER COMMENTS TO PCDR AND ASSESSMENT TEAM RESPONSES

March 7, 2011

### SUBJECT: MSC Review and Report on Compliance with the scheme requirements

Please find below the results of our partial review of compliance with scheme requirements.

|  |                                 |  |
|--|---------------------------------|--|
|  | CB                              | Scientific Certification Systems             |
|  | Lead Auditor                    | Dr. Sabine Daume                             |
|  | Fishery                         | Mexico Baja California Spiny Lobster Fishery |
|  | Fishery assessment product type | Public Comment Draft Report                  |
|  | Type of review                  | desk study                                   |

| No.   | Type of finding | Scheme requirement                                     | Reference            | Details  |
|---|-----------------|--|----------------------|--|
| 1.  | <i>Major</i>    | Fishery Certification Methodology v6 : Appendix 1: 5.2 | Section 7.1, page 22 | This section of the report does not provide a list or make reference to a list of all fishermen and the names of the cooperatives eligible to land Mexico Baja California red rock lobster. The section does also not provide information on how the list will be updated if applicable and where the information is kept. |
| <i>Team response: Included a cross reference to Table 2, listed Coops in the Unit of Certification.</i>   |                 |  |                      |  |
| 2.  | <i>Major</i>    | Fishery Certification Methodology v6 : Appendix 1: 5.2 | 7.1, page 22         | This section of the report mentions "designated shore-side processing plants" but it does not state who these designated processing plants are. It is not clear how traceability is assured in holding pens (presumably covered by Chain of Custody if these holding pens are ownership of the processors).                |
| <i>Team response: Added wording that the Shore-side processing plants are required to get Chain of Custody Certification. Removed wording concerning shore-side processing holding pens since this is a point to be covered under a potential Chain of Custody.</i> |                 |  |                      |  |
| 3.  | <i>Major</i>    | Fishery Certification                                  | Section 7.3, page 22 | This section states that lobster are landed primarily in the port of Ensenada. The   |

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|---|-------|---|----------------------|---|
|   |       | Methodology v6 :<br>Appendix 1: 5.2   |                      | wording of this phrase implies that lobster might be landed elsewhere, so clarification is required.  |
| <i>Team response: This has been corrected. All lobsters are landed in the port of Ensenada.</i>   |       |   |                      |   |
| 4.  | Major | Fishery Certification<br>Methodology v6 :<br>Appendix 1: 5.2  | Section 7.4, page 22 | This section contradicts itself with regard to where Chain of Custody starts (at first point of sale or at point of landing). It also states that the report does not cover processing beyond the point of landing. The wording could imply that other activities such as trading are covered in the report. Clarification is required. Further involvement of transportation and storage companies or other operators that do not take ownership of the product but are active in the supply chain of Mexico Baja California Red Rock Lobster have not been defined.   |
| <i>Team response: SCS feels that the wording is very clear that Chain of Custody begins at point of landing. Specific word 'processing' has been changed to generic word 'activities' in first sentence of second paragraph.</i>  |       |   |                      |   |
| 5.  | Major | TAB D-015<br>v2: 2.4-2.5  | Section 7.5, page 22 | Actual Eligibility Date is confused with Target Eligibility Date. Actual Eligibility Date is determined upon certification.   |
| <i>Team response: Changed back to Target Eligibility date.</i>  |       |   |                      |   |
| 6.  | Major | FCMv6<br>Appendix 1:<br>5.1   | PI 1.2.1<br>page 28  | Rationale for 90 score includes the statement "The main components of the harvesting strategy are: 1) limited access rights, given through concessions, which define limitations of fishing areas and limit the number of boats and traps. "However, this seems contradicted by information in Table 2 on p. 14 which shows that there are major discrepancies between the number of boats and traps that are authorized and those that are actually worked. In some cases the number of traps and boats actually working far exceed the numbers that are authorized. Consequently, the rationale does not justify the score for this PI. |
| <i>Team response: The concessions systems give access rights to a geographical area for each of the cooperatives of the unit of certification. Authorities follow the performance of the fishery based on the cooperatives Annual Harvesting Program (Section 6.4 of the report), where each cooperative regulates its fishing effort. So Table 2 included information for the allowed number of traps and boats when the fishery was managed by permits, where each Cooperative permit included the effort allowed. However, since 1992 the system changed to Concessions and the Annual Harvesting Programs were implemented. Table 2 was changed according to today's situation.</i> |       |   |                      |   |
| 7.  | Major | PA 18 section 4i<br>i) In the PISG tables, where identical scoring issues are repeated at different SG levels (in PIs 1.1.2, 1.2.2, 3.1.1, 3.2.2, 3.2.3), the text at the higher SG level/s is hereby deleted, leaving the text to appear only once at the lowest current SG level. | PIs 1.1.2 and 1.2.2  | The first scoring issue has not been deleted at SG100.  |
| <i>Team response: Scoring issue is now deleted for both PIs</i>   |       |   |                      |   |

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|--|--------------|--|--|---|
| 8.   | <i>Major</i> | PA 18 section 3<br>d) To contribute to the scoring of a PI, each scoring issue shall be fully and unambiguously met and rationale presented to support the assessment team's conclusion. This rationale shall make direct reference to each scoring issue and whether it is or is not fully met. An exception to this requirement is permitted only for those PIs that include only a single scoring issue at each SG level. For these PI's only it is permitted to partially score issues to obtain intermediate scores. Full rationale shall be provided, clearly explaining which aspects of the scoring issue are met. | PIs<br>1.1.2,<br>1.2.1<br>and<br>2.3.3 | Rationales should be clearly presented for all PIs. For scores over 80, scoring issues that fully meet 100 need to be clearly identified.   |
| <i>Team response: The PIs rationales were amended in order to clearly support scores. PI 1.1.2 was also rescored to 80 taking the comments into account. All elements of the 80 score are fully supported by the rational.</i>   |              |  |  |   |
| 9.   | <i>Major</i> | FCMv6 Appendix 1:<br>5.1   | PI 3.2.3<br>pg. 53                     | The scoring rationale does not detail how the fishing quotas are controlled. The trace reference links to a CONAPESCA document explaining the related fishing logbook procedures to be filled out by fishermen. |
| <i>Team response: The rational of PI 3.2.3 has been improved to include explanation on how the effort is controlled. As explained above, the concessions systems give access rights to a geographical area for each of the cooperatives. Authorities follow the performance of the fishery based on the cooperatives Annual Harvesting Program (Section 6.4 of the report), where each cooperative regulates its fishing effort. This system and the Annual Harvesting Programs were implemented in 1992. The rational for this PI now also includes specific information about sanctions for non-compliance implemented in this fishery (see PI guidepost).</i> |              |  |  |   |

This report is provided for action by the Certification Body and ASI in order to improve consistency with the MSC scheme requirements; MSC does not review all Certification Bodies work products and this review should not be considered a checking service. If any clarification is required, please contact Colin Brannen on +44 20 7811 3322 for more information.

Regards,



Maylynn Nunn  
Senior Fishery Certification Manager (Acting)  
Standards and Licensing Department

cc: Accreditation Services International

## La Paz, BCS, march 7, 2011.

In the Draft Report for the Spiny Lobster Fishery, Baja California Mexico, the unit of certification under assessment is defined as the California Spiny Lobster (*Panulirus interruptus*), which extends from Cedros Island in Baja California (28.6°N 115.5°W) through Punta Abreojos in Baja California Sur (26.6°N 113.2°W) and includes Isla Guadalupe approximately 250 km off the coast of Baja California, Mexico (29.03°N 118.27°W) (Figure 1).

In page 31 the report said that “Until now, INAPESCA has carried out the stock assessment based on the information of the Cooperatives located in the central part of the peninsula (Vega et al. 2000, Vega, 2003, Vega, 2006, Vega et al. 2010), however, the FEDECOOP intends to include for this certification the Abuloneros y Langosteros (AyL) cooperative, based in Isla Guadalupe. The fishing effort (number of traps) of this cooperative represents only 2% (n=320) of the total effort from the cooperatives that constitute the Unit of Certification (Table 2), with a mean catch of 7.2 t in the last five seasons, representing the 0.5% of the mean total catch (n=1,378 t) of all cooperatives of the Unit of Certification. Even the catch and effort of AyL cooperative are low, they should be included in future stock assessments”.

With regard these issues I submit to you the following comments:

1. As biological and fishery information on the lobster stock around Isla Guadalupe is very scarce, due the difficulties to monitoring biological aspects and catch and effort, it has been not possible to assess such stock by the same models applied for the central stock of the peninsula coasts.
2. In accord with available information only has been possible to reconstruct an approximated landings series since 1974-75 to up to present, but only continuously after 1992-93 (see next figure). Before this year there are no data for some years (1975-77, 1980-84 and 1990-91).

Preliminary examinations of data available allow to make some comments on the features of the lobster production in Isla Guadalupe, as follow:

- 2.1. In general the long-term trend is negative, except for an amazing and unexplained increase observed in the 2009/10 season. Also dramatic inter-annual and non regular fluctuations are underlying, and is no clear which could be the causes that explain such variations (climate factors?, under reports of the AyL cooperative?, illegal fishing?, or a combination of all?)
- 2.2. Landings before 1980 and in during the 2009-10 season suggest that higher levels of lobster abundance should be over 11-14 ton, or even may exceed 16 ton.
3. As mentioned before due to difficulties to monitoring biological parameters, catch and effort, until now there is not studies on the population dynamic and evaluation of the Guadalupe lobster stock.
4. On the basis of the above observations I believe that by now there is no scientific support to include the lobster fishery in the Isla Guadalupe among the unit to be certified under the MSC principles.

So, in order to the AyL cooperative should be included in future stock assessments I would suggest that should be necessary that FEDECOOP and/or the cooperative reach previously an agreement with INAPESCA that allow to conduct a research and monitoring plan, to get basic scientific information to support its certification.

5. On the other hand is worthy to mention some errors or miss understandings. For example, in the table 2 the header of column 4 (boat worked) seems to be wrong and perhaps means average number of traps used by boat in each cooperative.

6.-The origin and meaning of the co-management system is no properly explained. It was induced by the INAPESCA lobster program around late 1980s and early 1990s trough a series of workshops and technical meetings and strengthened by the long-term concessions (1992), which made obligatory that cooperative collaborate in monitoring and research activities undertaken by federal agencies like INAPESCA and Secretaria de Pesca (now CONAPESCA).

Hope these comments be taken into account,

Kindly Regards,

Armando Vega Velazque (Marine biologist)

Leader of the Lobster Program at

Centro Regional de Investigacion Pesquera(CRIP-La Paz)

Instituto Nacional de Pesca/SAGARPA

### **SCS response to stakeholder submission:**

**Team response to Points 1-3:** Thank you for your input and raising your concerns about the availability of information from Isla Guadalupe and other general information about the fishery. The current gap of information for Guadalupe Island should be addressed as part of the condition set for certification. It is too early to comment on potential trends of that part of the fishery but the information arising from studies and basic landing information should become available at the first annual surveillance audit. Ongoing collection of data will allow commenting on overall trends.

**Team response to Point 4:** We understand that there is currently a gap in biology and fishery information data of the California spiny lobster at Isla Guadalupe. However, the client has presented an Action Plan to deal with this data gap. The National Commission of Protected Areas (CONANP) confirmed to support research and monitoring to collect basic scientific information for the lobster fishery at Guadalupe Island and this is documented in the client`s action plan. With this information should become available.

**Team response Point 5:** The whole Table 2 was modified in order to reflect the current situation.

**Team response Point 6:** We appreciate this comment, however, in the report we did not intend to give a full historic account of the development of the co-management process, we only stated the current situation as a part of the harvest strategy and management.