

BAJA CALIFORNIA RED LOBSTER FISHERY, MEXICO

3rd YEAR MSC Annual Surveillance Audit Report

Certificate Number: F-SCS-0005



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General Information

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Surveillance Team	SCS	(Lead) Sian Morgan, PhD (Principle 1) Oscar Sosa-Nishizaki, PhD (Principle 2) Sian Morgan, PhD
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Methodologies	Part A: MSC Certification Requirements Version 1.4, Jan. 2014 Part C: FAM V2.1, TAB Directives, Policy Advisories	

Contents

Executive Summary	3
Assessment Overview.....	4
Methodology	4
MSC Certification and Conditions for Continued Compliance.....	5
Consequences for Non-Compliance	5
Surveillance Team.....	6
Surveillance Meeting	6
Results	8
General discussion.....	8
Principle 1 - Stock Status and Harvest Strategy.....	9
Principle 2 – Ecosystem impacts from fishing	11
Principle 3 – Management and Regulation	14
Conclusions and Recommendations.....	15
Status of previously raised conditions.....	15
Use of the MSC blue eco-label	22
References.....	22

Executive Summary

SCS finds that the Red Lobster Fishery in Baja California Mexico is still in general compliance with the MSC standard. SCS recommends the continued use of the MSC certificate. Original conditions for the fishery included: 1.2.4, 2.2.1, 2.2.2, 2.2.3 and 2.5.3. Condition 1.2.4 was behind target in Year 1. In Year 2, the two second year conditions were closed of the 5 original conditions (2.2.3 and 2.5.3) while 1.2.4 was brought back on target. At the third annual surveillance, conditions 2.2.1 and 2.2.2 were closed, while condition 1.2.4 was again scored as Behind Target. In Year 2 the client was given notice that strong ongoing progress on performance indicator 1.2.4 was expected: *“while the major non-conformance against the performance indicators (1.2.4) was closed out and progress against meeting the condition judged to be back on target, further progress will need to be demonstrated throughout the next year and evidence need to be provided at the next surveillance audit”*. In particular, the team noted that stock assessment work exploring alternative, biologically relevant models is needed, along with use of tagging data to estimate sublegal post-release mortality, and external peer review of the stock assessment models. One component of 1.2.4 – to include information from the portion of the fishery executed at Guadalupe Island demonstrated progress via collection of CPUE data, which is expected to continue over the next year. Conditions 2.2.1 and 2.2.2 were closed based on the fact that sardines used as bait total 3,723 mt, representing a small percentage compared to the total catch for the west coast of Baja California. The increase in the total catch is also considered to be small compared to the latest estimate of MSY. Also, non-target catch in traps is also low relative to the likely overall population abundance of the species captured. The only species with vulnerable life history traits taken as non-target bycatch are sharks, which are released alive. Work to address the elements of condition 1.2.4 related to stock assessment is expected to prepare the fishery well for next year and the beginning of re-assessment under the new V2.0 Certification Requirements. If work has not progressed on 1.2.4, the certificate will move into suspension and withdrawal, as the management agency has been given sufficient time to address these concerns.

Tonnes in this report follow the metric system convention that tonnes=metric ton=1000 kg. Tonnes is a non-SI unit, accepted for use within SI. In this report, tonnes is abbreviated to “mt”.

Table 1: Summary of Performance Indicators with conditions

Indicator No., Year Due	Status of Condition/Non-Conformance
1.2.4, Year 1	Condition Open - Behind Target
2.2.1, Year 3	Closed 2014, rescored to 80
2.2.2, Year 3	Closed 2014, rescored to 80
2.2.3, Year 2	Closed 2013, rescored to 80
2.5.3, Year 2	Closed 2013, rescored to 80

Assessment Overview

Methodology

The surveillance audit was carried out in accordance with the Marine Stewardship Council (MSC) Certification Requirements Version 1.4. A fishery has the potential to move into suspension and certificate withdraw at surveillance if it is behind target against any performance indicator two years in a row. This did not occur in 2014, but there is this potential for 2015, related to the condition associated with performance indicator 1.2.4.

The issues for the certifier are whether the fishery has sufficiently acted on the required conditions set forth in the original certification report, and whether a random check on the performance of the fishery verifies continued compliance with the MSC standards.

The annual surveillance audit process is comprised of four general parts:

1. Prior to the audit, the client is expected to submit documentation to the CAB related to conditions due to be closed or progressed at the upcoming onsite audit. CABs forward any documentation to team members for review prior to the onsite meeting.
2. The surveillance/assessment team meets with the client fishery, stakeholders and relevant agency staff to allow relevant parties to present updates on the fishery, progress against conditions due that year, or progress against conditions due in upcoming years. The surveillance team can then ask questions about the information provided to ensure its full understanding of how well the fishery management system is functioning and if the fishery management system is continuing to meet the MSC standards and progress against conditions.
4. The surveillance team presents its preliminary findings to the client fishery at the end of the site visit. The results outline the assessment team's understanding of the information presented and its conclusion regarding the fishery management system's continued compliance with MSC standards. Where indicated, the surveillance team may request that the client fishery provide supplemental information, if the surveillance team finds that there are still issues requiring clarification or if the team has not received documentation to substantiate information presented during the onsite meeting.
4. Where appropriate, the client fishery submits final information to the surveillance/assessment team for consideration in the surveillance findings and report. The surveillance team then reviews the final information and submits a final report to the client fishery (**within two weeks of the onsite audit**). The client then reviews this report for accuracy,

provides comments, and returns the report to SCS for finalization. **Public posting of the report on the MSC website needs to happen within 30 days of the onsite audit.**

5. If work by the team beyond this period is required because of delays related to final document submission, additional fees may be incurred by the client.
6. If there are continued compliance concerns, these are presented as non-conformances that require further action and audits as specified in the surveillance report.

MSC Certification and Conditions for Continued Compliance

An MSC certificate is valid for a period of 5-years. During the initial certification, five conditions were identified (see final report on MSC website¹). Conditions must be closed-out before the end of the certification period on 29th June 2016.

The conditions associated with the 2011 re-certification of the Baja Red Rock Lobster fishery were given in the full assessment report and addressed with the client action plan. The action plan included the actions to be undertaken, responsible parties and timeframe for meeting milestone goals. During this and each surveillance audit, the audit team checks progress against these milestones. The surveillance team may also “spot check” other performance indicators from the original assessment to verify that the fishery is still in compliance with the MSC requirements. In this case all conditions due this year, work associated with the stock assessment described as expected in the 2nd annual surveillance report, as well as elements of Principle 3 were checked and have been addressed in this report.

The audit team evaluates progress against conditions as “Ahead of Target”, “On Target,” or “Behind Target.” This is based on whether there is enough evidence that sufficient progress is being made relative to the client action plan timeframe for milestones. If a “spot check” of performance indicators reveals that the Performance Indicator (PI) no longer meets all scoring elements of the Scoring Guidepost 80 (SG80), an additional “condition” will be raised, or a previous condition re-opened, that must be addressed within the life of the certificate. In this surveillance audit, minimal progress against performance indicator 1.2.4 was evident and a condition was re-opened: no new conditions were raised.

Consequences for Non-Compliance

Where a fishery is determined to be “Behind Target” for a condition, the surveillance team will work with the client representatives to determine the timeframe for closing of the condition within the original certification period and may include interim milestones for completion. The client must provide evidence that the fishery is working toward compliance.

¹ Available at: <http://www.msc.org/track-a-fishery/>

SCS is required to enact section 7.4. of the MSC Certification Requirements, where a fishery certificate may be revoked or suspended, if a condition is not back “On Target” within 12 months of falling “Behind Target” following the MSC certification requirements 27.22.9.

Surveillance Team

Two assessment team members were involved in the 3rd annual surveillance audit, which was also attended by Dr. Carlos Alvarez, SCS. As outlined below, and to fulfill the requirements of the MSC Certification Requirements v. 1.4, team members have suitable technical background to satisfy expert team member requirements and Dr. Sosa-Nishizaki was part of the re-assessment team.

Dr. Sian Morgan, Scientific Certification Systems (SCS)

Dr. Morgan led the audit. She is responsible for leading SCS’s Sustainable Seafood Certification program in the Americas, 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. Morgan has been involved and/ or led numerous pre and full assessments as well as surveillance audits. Dr. Morgan is a fisheries ecologist with special expertise in the biology and ecology of exploited marine resources and data deficient fisheries. She has over 10 years professional experience working closely with various sectors in standards setting processes for fisheries and aquaculture. Dr. Morgan is a certified lead auditor under the International Standard Organization (ISO) 90011:2008 certification requirement. She has worked with multiple MSC assessments in Mexico, as well as assessments for finfish, crustaceans and molluscs.

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 participate 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 and has been on MSC assessment teams for several Mexican fisheries including the Mexican Gulf of California Sardine fishery and the Baja California Lobster Fishery in Mexico.

Surveillance Meeting

The surveillance audit for 2014 comprised:

1. A summary of outstanding conditions was provided to the client, management and scientists before the meeting. The Assessment Team provided an introduction and orientation for the audit at the start of the meeting via powerpoint presentation. The opening with the client

included an exchange of information relevant to the surveillance audit, discussion of the agenda to include relevant agency staff, and introduction to the role of Dr. Alvarez as an observer at the audit.

2. The onsite meeting took place on the 8th of July with FEDECOOP technicians and management as well as staff from CONAPESCA and scientists from INAPESCA and CONANP. The discussions focused on the ongoing activities associated with the conditions placed on the fishery as well as research related to the fishery.

3. Necessary documents were presented by the client to SCS during the meeting. Additional evidence related to stock assessment and alternative models was received after the meeting.

Table 2: Annual Assessment Meeting Attendees and Organizations

Meeting Attendees	Organization	Role
Sian Morgan	SCS	Team Leader P2 Expert
Oscar Sosa-Nishizaki	CICESE	Assessment Team, P1 Expert
Carlos Alvarez	SCS, Oceanides Consulting	P1 Expert, Observer
Mario Ramade	FEDECOOP	Client Representative
Geronimo Aguilar	FEDECOOP	Client Representative
Leopoldo A. Alvarez Vera	CONAPESCA	Representative of Sate delegate
Juan Domingo Aguilar Osuna.	Progreso	COOP technician
Armando Vega Velazquez	INAPESCA	Scientific Research Stock status
Pedro Sierra Rodriguez	CRIP Ensenada, INAPESCA	Director
Armando Vega Bolaños	CRIP La Paz, INAPESCA	Researcher
Marisol Torres Aguilar	CONANP, Reserva de la Biosfera Isla Guadalupe (RBIG	Reserve Director
José Antonio Espinoza Montes	Buzos y Pescadores	COOP technician
Donaxi Boraes Flores	CONANP, Reserva de la Biosfera Isla Guadalupe (RBIG	Isla Guadalupe
Juan Carlos Bonilla Gutierrez	Purisima	COOP technician
Luis Antonio Arce Patron	Purisima	COOP technician
Ramón García Arce	Bahia Tortugas	COOP technician
Irma Carmina Salinas Ivan	Emancipacion	COOP technician
Rigoberto Luna Villalobos	California de San Ignacio	COOP technician
Aldo Alexis Murillo Cruz	Leyes de Reforma	COOP technician
Eduardo Enriquez Gonzalez	Punta Abreojos	COOP technician

Results

General discussion

This is the 3rd Annual Surveillance Report (2014) prepared by SCS to meet the requirements of the MSC for annual audits of certified fisheries.

It is SCS's view that the Baja California Lobster Fishery continues to meet the standards of the MSC and to comply with the 'Requirements for Continued Certification'. SCS recommends the continued use of the MSC certificate through to the next audit with emphasis on corrective actions from the original assessment related to 1.2.4 which is considered, for a second time during this certificate, to be behind target.

The section below lists the documentation received by the team since 2011 and also provides updated background information about the status of the stock, the ecosystem impacts from fishing, and management arrangements for this reporting period.

According to the terms of the Action Plan, the client has provided the following information on the work undertaken since re-certification in 2011.

- Monthly Production and Fishing effort for the 2012-2013 season (EXCEL File)
- Reporte Carnada para langosta temporada 2012/13. (Report on Bait used)
- Reporte de captura incidental registrada durante la temporada langostera 2012/13. Ramade et al. 2013. (Incidental By-Catch report)
- Carta Nacional Pesquera 2012
- Presentación Vega Velázquez, A. (2013)
- Evaluación del estado actual (2012-2013) de la pesquería de langosta roja (*Panulirus interruptus*) en la región centro occidental de la península de Baja California Vega Velázquez et al. (2013)
- SAFE Sardine Assessment, Appendix C (2011)
- Presentacion: Mario Ramide – Auditoria Pesqueria De Langosta (2014)
- Cabrillas - Carta Nacional (2010)
- Cangrejo Y Caracol - Carta Nacional Pescera (2010)
- Pacific Sardine
- Pelagicos Menores – Carta Nacional Pescera (2012)
- Report Temporada de Pesca (2013)
- Presentación Vega Velázquez, A. (2014)

Principle 1 - Stock Status and Harvest Strategy

The 10 cooperatives operating in the central region of the Peninsula catch approximately 78% of the total catch of this species. Table 3 summarizes the catch and effort information for the 10 fishing cooperatives during the 2011/12, 12/13 and 13/14 fishing season. The catch during the most recent fishing season (1446.82 tonnes = 1 446 820 kg) was lower than the previous season (1598.3 kg). However effort (total traps used) also was slightly lower, and members of the fishery stated that effort was deliberately lowered in the past season due to diminished prices for spiny lobster in the market.

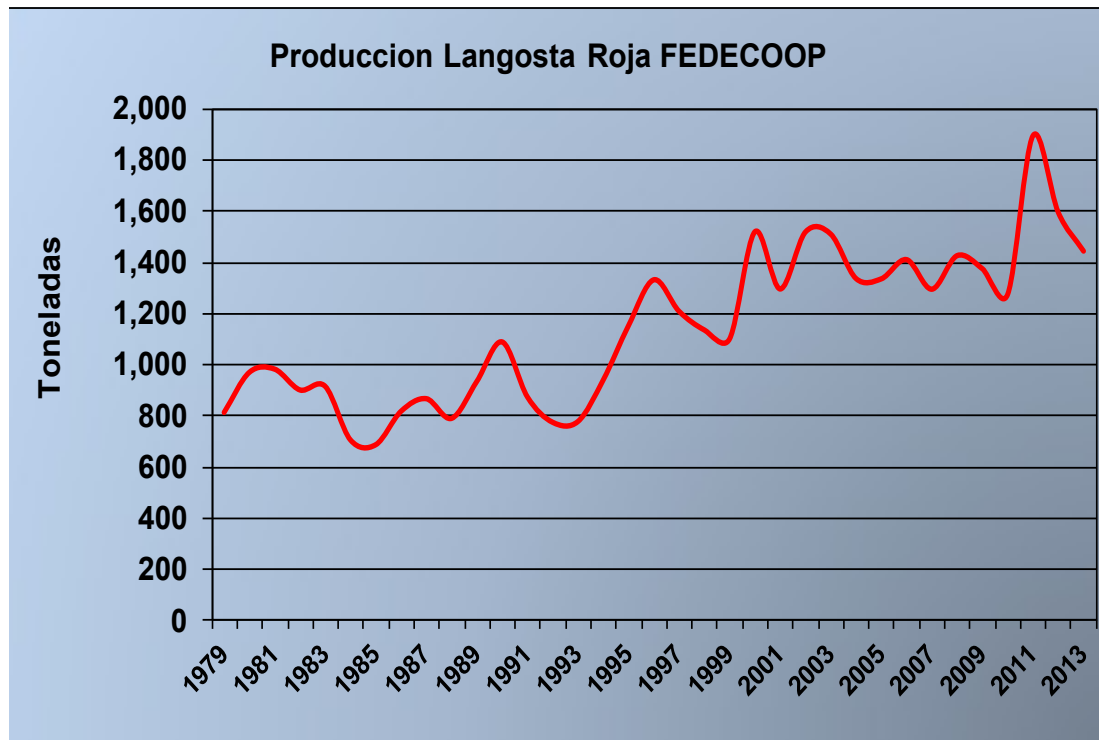


Figure 1. Catch by year in metric tonnes of red spiny lobster by fishers within the FEDECOOP from 1979 through the most recent fishing season, 2013/2014. (From Ramade 2014. Auditoria Pesqueria de Langosta 2014. ppt).

Table 3. Catch (metric tonnes) and effort (number of trap-hauls) in each of the 10 fishing cooperatives during the 2011/12, 12/13 and 13/14 fishing seasons (Ramade, V.M. 2013, 2014).

COOPERATIVE NAME	2011/12		2012/13		2013/14	
	Total catch (tonnes)	Total effort (trap-hauls)	Total catch (tonnes)	Total effort (trap-hauls)	Total catch (tonnes)	Total effort (trap-hauls)
ABULONEROS Y LANGOSTEROS	9.355	16,241	7.165	11,092	8.021	13,332
PESCADORES NACIONALES DE	281.321	242,280	256.901	259,280	200.502	251,350

ABULON						
BUZOS Y PESCADORES	145.569	178,888	170.340	180,310	151.778	200,811
LA PURISIMA	304.208	373,536	259.425	352,351	248.376	378,556
BAHIA TORTUGAS	240.330	272,815	190.553	238,791	163.615	233,737
EMANCIPACION	221.564	267,683	172.018	267,650	167.013	223,380
CALIFORNIA DE SAN IGNACIO	118.294	134,874	88.378	124,346	79.387	103,431
LEYES DE REFORMA	200.551	150,150	134.104	154,957	105.396	158,477
PROGRESO	170.271	376,750	140.346	341,626	145.516	346,523
PUNTA ABREOJOS	216.545	288,532	186.241	290,326	185.234	282,910
TOTAL	1,898.654	2,301,749	1,598.307	2,220,729	1,446.816	2,192,507

The researcher in charge of the Lobster Program-INAPESCA (Armando Vega Velazquez) presented an update analysis of the status of the lobster stock, using a Biomass Dynamic Model (season 1960/61 to 2013/14; Hilborn and Walters 1992) and Length Cohort Analysis (LCA, season 1997/1998 to 2012/213; Jones 1984). The stock assessment based in the dynamic model indicated that current biomass continues to be larger than the biomass at MSY ($B/B_{MSY} = 1.58$), with an average catch in the last 5 years of 1,528 t that represent the 64% of the catch at MSY level, and a fishing mortality value of $F=0.093$, that represents the 43% of the F_{MSY} . The LCA estimated a mean $F= 0.31$ considering both sex catches, with an estimated mean fishable biomass of 3,988 mt, while the mean catch was estimated as 1,315 mt, representing 33% of the fishable biomass. The results of both assessments included uncertainties in the estimated parameters for the models. These two assessment approximation results were interpreted by the researcher in charge as consistent, suggesting that fishing level is lower than the MSY level, suggesting no signs of full exploitation.

Information for the Guadalupe Island fishery has not been included in either of the models for the fishery. In 2014, the expert team was provided values from seasons 1997/98 through 2013/14 documenting catch and CPUE values for all locations including Guadalupe Island, and was told that there will be efforts to either incorporate Guadalupe catch and effort into the next stock assessment, or develop a stand-alone stock assessment approach for Guadalupe Island due to its geographical location and because its catches and effort only represent 0.5% and 0.6%, respectively, of the totals considered in the assessment.

The expert team was also informed that direct mortality of the sublegal size California spiny lobster during traps hauls was assessed and has been incorporated in the LCA assessment.

New preliminary results of post-release mortality by a tagging experiment at Guadalupe Island were presented to the CAB. Preliminary results in a powerpoint presentation given by Armando Vega Bolaños indicated that tagging data are being used to estimate growth rates, but no evidence was presented to indicate that tagging data were being used to estimate post-release survival.

Evidence that the report of the stock assessment was internally or externally reviewed was not presented at this year's surveillance audit.

Principle 2 – Ecosystem impacts from fishing

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.

The total Red lobster catch was close to 10% lower than the previous year (Table 3). This is unlikely to affect the impacts of the fishery on or the status of retained species, bycatch, ETP species, habitat, or trophic function. Four conditions were placed on the fishery under Principle 2 during the re-certification, two of these were closed out during this second surveillance audit in 2013 and the other two scheduled to be closed during this 2014 third surveillance audit. Progress against these conditions is all adequate and determined to be on-target.

The fishery currently undertakes a logbook system, where logbooks are completed by the technician for each cooperative. The design for the logbook system was created by INAPESCA and the FEDECOOP. Bycatch and other interactions in the fishery are reported in the "observation" column of logbook forms. Evidence has been provided to SCS in previous surveillance audits that logbooks are used to show non-target catches. Considering the scale, intensity and nature of the fishery (pot/trap fishery) this action is considered appropriate to collect information on bycatch species. Bycatch was estimated from a sample of 41.5% of observed traps (n=909,091 traps) from a total of 2,192,507 hauls and the totals by species or group of species are presented in Table 4. Results are compared with numbers from a previous study by Shester, collected as part of doctoral research (2008) where from September to November, fishing season 2006/07, 40 species were recorded. Fourteen of the species recorded by Shester (2008) were categorized as fish, two as sharks and overall, were similar to species found in this report (Table 5) based on the 2013/2014 season, with finfish and crustaceans (crabs) comprising the dominant species groups of non-target catch: in the 2012/2013 season octopus were also captured in large numbers. Some species reported by Shester (corals, snails, crabs, seaweed, sea cucumber and others) do not appear in the log records and the recent reports list eels and abalone as bycatch, which did not appear in Shester's report. For most species, or groups of species, the estimate made for the fishing season 2006/07 is considerably higher than in more recent years and records recorded by cooperative members.

The most notable difference between non-target interactions reported by Shester and current logbooks is the estimated 16,655 seabirds killed in season 2006/07 reported by Shester (2008) compared to 65 bird mortalities calculated from logbooks in the 2013/14 season. Both estimates represent extrapolations from subsampling.

There are no written accounts on plausible explanations for such differences, but during the third surveillance audit it was suggested that smaller sample sizes, across shorter temporal periods in two particular locations (limited sampling) in the 2006/07 report may have led to overestimation of bycatch, and particularly bird mortalities. Shester's work used five trained observers quantifying catch of all species on fishing trips in Punta Abreojos and Bahia Tortugas. The work observed 7 trips, totaling 377 traps in one month in 2006 (Jan) and 49 trips, totaling 4563 traps from Sept – November 2006, for a total of 4940 observed traps on a total of 56 trips over four different months. In contrast, the current logbook system sampled a total of 909,091 trap-hauls resulting in 184 times the coverage of the original Shester 2008 study.

Overall, a total of approximately 3.6% (in numbers) of the total landings of the target lobster was non-target catch in season 2012/13 and 2.4% in season 2013/14. Some of the non-target catch is retained (e.g. finfish), some is discarded (e.g. sea birds), and some is reported to be released alive (e.g. sharks, crabs with claws removed).

Table 4: Total number of individual non-target species (or groups of species) caught in lobster traps operated during the 2013/14 fishing season, extrapolated from a sample of traps to the total of the traps operated by the 10 COOPs covered under the unit of certification.

Species	# Organisms	Org /Traps	Organisms /Season
Sharks	2,032	0.002	4,901
Finfishes	10,158	0.011	24,499
Crabs	15,936	0.018	38,434
Sea snail	1,874	0.002	4,520
Octopus	2,831	0.003	6,828
Eels	895	0.001	2,159
Sea birds	27	0.000	65
Sea cucumber	5	0.000	12
Abalone	1	0.000	2
Sea urchin	5	0.000	12
Total	33,764		81,431

Based on two years of logbook data, crab and finfish are the predominant non-target species encountered by number (Table 4), where are estimated to comprise only 1.1% and 0.7% of lobster landings by weight respectively. The finfish group is composed of different species with sand basses reported verbally as dominating the group: these are retained. For the purposes

of MSC assessment, neither of these species is considered a “main” bycatch species (generally >5% of total landings).

Table 5. Incidental catch by species group, by number of individuals, in the red lobster fishery in the area under the unit of certification. Values for 2006/2007 are extrapolations generated by Shester 2008, while values in 2012/2013 and 2013/2014 were generated using logbook data from members of the FEDECOOP.

Species	2006/07	2012/13	2013/14
Octopus	1,851	28,821	6,829
Crabs	143,418	38,306	38,434
Sharks	31,922	7,262	4,901
Finfishes	35,624	34,559	24,499
Sea snails	32,847	2,262	4,520
Abalone	-	8	2
Eels	-	2,072	2,159
Sea birds	16,655	241	65
Sea cucumber	-	-	12
Sea urchin	-	-	12
Total	262,387	113,531	81,431

The assessment team was also provided with a summary report of bait species and amounts used as bait during the fishing season. A total of 3,576,604 kg bait was used by the 10 COOPS during the 2012/13 fishing season and 3,885,177 kg in the season 2013/14 (Table 6). The main bait species used in the fishery are Sardine (bought from the commercial fishery in Ensenada) and locally caught by artisanal fishermen close to the COOPs fishing grounds. Sardines comprise 96% of all bait use. White fish and Sheephead are also used and mainly caught in fish traps at Guadalupe Island. The use of non-target catch in traps as bait is unknown, as bait categories reported by the fishery have a singular category that may or may not include local bycatch, termed “other”.

Catch of sardine (*Sardinops sagax*) used for bait in 2013 totaled 3,723 mt (2,513 from Ensenada and 1,210 local). This catch represents 6% of the total estimated catch (60,000 mt) for the whole sardine fishery in the west coast of Baja California (Hill *et al.* 2011; Enciso and Coterio 2014). The mean of an estimated distribution for this sardine stock maximum sustainable yield

is near 60,000 mt with an approximated 95% CI of 47,000 to 76,000 mt (Enciso and Coterio 2014b). This implies that an increment of 6% in the catch puts the exploitation level slightly above the estimated mean and nowhere near the upper CI bound. Under these conditions, it was considered unlikely that the sardine catch for bait could have a critical effect on the sardine stock. It is also necessary that fish used as bait follow legal regulations which include a minimum **size limit set specifically for Pacific sardines. It is recommended that the client present data showing the size distribution of the relevant sardine stock, evaluating whether bait fish are in compliance with size regulations for Pacific sardines, in the 4th annual surveillance audit.**

Table 6: Amounts of bait used (kg) by all 10 COOPs in the 2012/13 2013/14 lobster fishing seasons by species groups.

Year	Whitefish	Sheephead	Sardine from Ensenada	Sardine Local	Mackerel	Bonito	Sea Bass	Skipjack	Other	Total
2012/13	30,496	3,050	2,109,006	1,399,976	22,778	5,549	5,750	-	-	3,576,604
2013/14	39,596	3,869	2,513,435	1,210,376	39,460	15,825	43,298	2,000	17,319	3,885,177

Part of the 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. During the audits the Director of the Guadalupe Island Biosphere Reserve (MS. Marisol Torres) confirmed her commitment to the process and trying to secure more funding for research and improved monitoring on the Island. In 2011 a voluntary “no fishing zone” (ca. 500 ha) was introduced at Guadalupe Island in front of the fishing camp. This zone will stay effective until 2021. A study initiated to compare pueruli settlement (settlement collectors) inside and outside the protected area apparently has resulted with little larvae settled in the collectors and it was suggested that the experiment in Isla Guadalupe may require using different collectors than the ones used regularly. An update on this work was presented by powerpoint in the 2014 surveillance audit, but has not produced conclusive results on environmental drivers correlated/causing settlement: temperature and upwelling are being explored.

Principle 3 – Management and Regulation

The CNP was updated in August 2012. The client provided a copy of the latest version. There are 2 main updates related with the lobster fishery:

- Mexican chocolate clams cannot be used to bait lobster traps.
- In Fishing Region I, west coast of Baja California Peninsula, the maximum allowed number of traps per season was established to 29,000 traps. Fishing effort was more clearly defined as: number of traps used by fishing boat per unit of time.

The Baja Lobster Management Plan document has been passed from INAPESCA to CONAPESCA and is awaiting publication, following internal and legal review: in the 2013 audit, publication was expected in 2014. No updates in the timelines associated with publication were available

from CONAPESCA at the 2014 surveillance audit. The audit team reinforced the importance of publication of the fisheries management plan at the 3rd annual surveillance audit, in preparation for re-assessment. This fisheries management plan is taking longer to publish than other similar, complex plans, initiated at the same time in Mexico.

Conclusions and Recommendations

It is SCS's view that the Baja California Lobster fishery continues to meet the standards of the MSC and complies with the 'Requirements for Continued Certification'. SCS recommends the continued use of the MSC certificate through to the 4th surveillance audit with performance indicators receiving new corrective action requests: progress against one performance indicator identified during the original assessment was re-opened as behind target due to poor progress. Strong progress against all components of condition 1.2.4 will need to be demonstrated throughout the next year and evidence needs to be provided at the next surveillance audit in order to close this condition and avoid suspension of the certificate in 2015. There are also the recommendations, and expectations, that data on the size structure of local sardines will be presented to demonstrate compliance with regulatory size limits for Pacific sardines, that logbook data will record information to the species level, as well as record whether species are retained, discarded (returned to the water dead), or returned to the water alive, with particular attention to the main bait species, Whitefish and Sea Bass. The team provides the preventative caution that if the FMP for the Lobster fishery is not published and in use by the next surveillance audit (mid-2015), this could also result in one or more new conditions under Principle 3, that would relate to fishery-specific objectives (3.2.1) and effective decision-making processes (3.2.2) in governance bodies responsible for managing the fishery.

Status of previously raised conditions

1.2.4		
There is an adequate assessment of the stock status.		
SG 60	SG 80	SG 100
The assessment estimates stock status relative to reference points.	The assessment is appropriate for the stock and for the harvest control rule, and is evaluating stock status relative to reference points.	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.
The major sources of uncertainty are identified.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
	The stock assessment is	

	subject to peer review.	<p>The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.</p> <p>The assessment has been <u>internally and externally</u> peer reviewed.</p>
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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 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.

Action Plan	By Who	Due
<p>Client will request from INAPESCA to perform stock assessment using a size-structured model including uncertainty estimations for its parameters.</p> <p>Information from the Guadalupe Island fishery will also be requested from INAPESCA to be incorporated in the stock assessment process.</p>	FEDECOOP – INAPESCA	December 2011 – March 2012
<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

Progress on Condition: During the surveillance audit the leader of the Lobster Program of INAPESCA provided results of an update stock assessment using a Biomass Dynamic Model (BDM), showing that MSY level continues to be above the references point of $B/B_{MSY}=1$, with a value around 1.6 and results from a Length based Cohort Analysis (LCA) that showed that recently catches biomass have not reach the fishable biomass of the stock. It has to be noticed that LCA by Jones (1984) assumes a constant parameter (equilibrium) system, i.e. “pseudo-cohorts” (Sparre and Venema, 1992). On the other

hand, the BMD by Hilborn and Walters (1992) does not explicitly deal with growth, recruitment, or survival (Hilborn and Mangel 1997). The Baja California red lobster fishing catch, as in other lobster fisheries, is based mainly in the recruitment to the fishery at the start of each season, and Vega et al. (2014) suggest that catches can be influenced by oceanographic conditions producing inter and intra annual variations. Under such conditions, **the use of stock assessment that accurately represents this dynamic of the resources and which better represents the uncertainties in the parameters estimations is still pending.** The analysis of the lobster fishing catch and effort at Guadalupe Island were presented, and ideas of how this information will be incorporated into the stock assessment were provided to the CAB during the surveillance audit. Included is the possibility that they might decide to use a specific stock assessment for the island, because catch and effort at the Island only represent 0.5% and 0.6%, respectively, from the total. **For the next annual surveillance evidence shall be provided that the catch and effort data of Guadalupe Island have been assessed.** The team recognizes that direct (in trap) mortality of sub-legal sizes has been accounted for and included in the LCA analysis. Tagging work is underway, but presentations indicated that this work is being used to generate growth rates, rather than to calculate estimates of survival frequencies for sublegal releases, which was the main intent behind the tagging request. Given the percentage of sublegal size classes encountered by the fishery, **this is an important piece of information for management that remains outstanding. Evidence of an internal and external review of the results of the following update stock assessment at INAPESCA shall be provided at the next annual surveillance. It is crucial that the additional four pieces of work outlined above (alternative stock assessment modeling, Guadalupe data incorporated into models, post-release survival estimates incorporated into models, internal & external review of stock assessment) will be covered and evidence provided at the next surveillance audit to avoid another non-conformance and potential suspension of the certification.**

Status of Condition 1.2.4: Open – Behind Target.

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.		
SG 60	SG 80	SG 100
Main retained species are <u>likely</u> to be within biologically based limits or if outside the limits there are <u>measures in place</u> that are <u>expected to</u> ensure that the fishery does not hinder recovery and rebuilding of the depleted species.	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 of demonstrably effective management</u> measures in place such	There is a <u>high degree of certainty</u> that retained species are within biologically based limits.
If the status is poorly known there are measures or practices in place that are expected to result		Target reference points are defined and retained species are at or fluctuating around

in the fishery not causing the retained species to be outside biologically based limits or hindering recovery.	that the fishery does not hinder recovery and rebuilding.	their target reference points.
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Score: 70

Score in 2014: 80

Recommendations 2014: 2

Condition 2.1.1:

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.

Action Plan	By Who	Due
The client will introduce fishing logbooks, the source and quantity of bait used during the fishing operations will be recorded, and summarized in a monthly and seasonal manner.	FEDECOOP	March 2012
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.	FEDECOOP	March 2013

Progress on Condition: Prior to the start of the 2012/13 season, a specific reporting form (*Registro de Producción Mensual de Carnada- Pesquería de Langosta*) was developed to capture details of bait used during each month of the fishing season (September –February). The assessment team received an updated report in 2014 that provided the volumes, by species groups (e.g. sardine) of bait used by each COOP during the fishing season, so that there are now two seasons of data recording bait volumes used annually. The assessment team expects continued monitoring of bait species to establish variations between the fishing seasons.

Of the bait used, 96% is sardines and in the season 2013/14 it comprised a total volume of 3,723 mt (2,513 from Ensenada and 1,210 local). This catch represents 6% of the total estimated catch (60,000 mt) for the whole sardine fishery in the west coast of Baja California (Hill *et al.* 2011; Enciso and Coterio 2014). The mean of an estimated distribution for this sardine stock maximum sustainable yield is near 60,000 mt with an approximated 95% CI of 47,000 to 76,000 mt (Enciso and Coterio 2014b). This implies that an increment of 6% in the catch puts the exploitation level slightly above the estimated mean and nowhere near the upper CI bound. Under these conditions, it was considered unlikely that the sardine catch for bait could have an effect on the overall sardine stock. During the onsite visit, it was noted that the sardine obtained locally may

be composed of small fish below the legal size limit for Pacific sardines. This is a potential area of concern and it is recommended that the client address this problem and discuss the scope of any potential impact on the sardine stock.

The team concluded that information on sardine catch for bait is reliable and catch of other species for bait are considered to be low enough to represent a risk to their populations. The client has therefore fulfilled the requirements under condition 2.1.1. **A recommendation however, is issued to present information on the size distribution of sardines caught locally to assure that these conform with existing minimum size limits in national regulations. Another recommendation is also issued to present information on the contribution of the lobster fishery to the total catch of Whitefish and Sea Bass in the areas where they are extracted.**

Status of Condition 2.1.1: Closed

2.2.2		
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.		
SG 60	SG 80	SG 100
<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>The measures are considered <u>likely</u> to work, based on plausible argument (eg, general experience, theory or comparison with similar fisheries/species).</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 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>There is some evidence that the partial strategy is being <u>implemented successfully</u>.</p>	<p>There is a <u>strategy</u> in place for managing retained species.</p> <p>The strategy is mainly based on information directly about the fishery and/or species involved, and <u>testing supports high confidence</u> that the strategy will work.</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>

Original score: 70

Current score 2014: 80

Condition 2.2.2

By the third surveillance audit, provide some 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.

Action Plan	By Who	Due
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.	FEDECOOP	March 2013
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	With INAPESCA	March 2014

*Note that at the time of assessment, bait was scored under the bycatch section of the FAM V2.1 certification requirements (performance indicators 2.2.X). Under more current versions of the standard, bait is scored under PIs for retained species (2.1.X). Based on the original assessment, we have clearly separated both issues, but retained the numbers associated with the scoring system used for the original assessment.

Progress on Condition (bait): The assessment team received a report that provided details on species groups and amounts of bait used by each Co-op during the fishing season (see above). As discussed in closing Condition 2.2.1, catches of both Monterrey sardine and all other species taken for bait is not considered to represent a risk to their populations. No specific strategy is therefore required if bait species are considered to be fished within biologically based limits.

Progress on Condition (bycatch): Current logbook forms are used to report bycatch and other interactions in the fishery (Bitácora de la Pesquería de Langosta INAPESCA 2006). Considering the scale, intensity and nature of the fishery (pot fishery) this action is considered appropriate to collect information on bycatch species. Data from 2012/2013 and 2013/2014, with strong overall sampling of total trap hauls (41.5% in the most recent season) indicates that approximately 2.4% (in numbers) of total landings is comprised of non-target catch. Finfish (composite of species) and crabs are the largest groups of non-target catch by number, comprising <2% of total landings apiece (see background for more detail). Therefore it is unlikely that any individual species is being taken as non-target catch at a level that poses a threat of serious or irreversible harm at the population level, and none are considered main retained species for the purposes of MSC assessment. Sharks could be considered as main retained based on the vulnerability of their life history, but are reported to be released alive, and are also captured in relatively small numbers (n=4902 in the last season, 0.1% of total landings).

For these reasons, the absence of a strategy exceeding monitoring was deemed sufficient to satisfy the PI at the SG 80 level and the team closed the condition related to bait and non-target catch in 2014.

Status of Condition 2.2.2: Closed

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>

Original score in 2011: 75

Score in 2013: 80

Recommendation 2012: 1

Condition 2.2.3:

By the second surveillance audit, 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.

Action Plan	By Who	Due
The client will record the source and quantity of bait used in the lobster fishery in logbooks specifically designed for this purpose and summarize the results by monthly and by fishing season.	FEDECOOP	March 2014.

Recommendation: From 2013 “*Information about bycatch species is collected on the existing logbook form and recorded in the “observation” column. Reports were provided for both summarizing the findings for the 2012/13 fishing season....monitoring and reporting will continue.*”. On this basis, and because the client had fulfilled the content of the action plan originally set in 2011, the condition was closed. At this year’s surveillance audit, the team noted that current reporting format is weak. **Therefore it is recommended that logbook information record non-target catch by individual species and record whether such take is retained, discarded (returned to the water), or released alive.** The team cautions the client that for species that are caught in large numbers, and for reassessment under Version 2.0, it is likely to be necessary to present estimates of overall catches by species relative to population estimates of non-target catch in order for the team to appropriately score species under Principle 2. It is also in the fishery’s interest to demonstrate where species are released alive, such that non-target catch is not overestimated, as may be the case under the current recording system.

Use of the MSC blue eco-label

Fisheries that meet the standards of the MSC for a sustainable and well managed fishery are eligible to use the MSC blue eco-label on products originating from the fishery. The fishery does not use the eco-label. A logo licensing agreement with the logo licensing branch of the MSC, the MSCl is not required.

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