

Review of the Bahamian Lobster Fishery Improvement Project 2015



The Retreat Gardens,
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FINAL

Prepared for

WWF-US



Prepared by

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1 BACKGROUND

1.1 Historical Overview

In February 2009, WWF funded an MSC pre-assessment of the Bahamian lobster fishery (*Panulirus argus*) to assess the performance of the fishery in terms of the Marine Stewardship Council's (MSC) principles and criteria for sustainable fishing (the 'MSC Standard'). A scoping document was subsequently produced to highlight areas of key concern within the fishery and provide recommendations and suggestions how the fishery may overcome these issues to reach the MSC Standard. A stakeholder workshop was held in May 2009 to raise awareness of the Fishery Improvement Project (FIP) and to discuss the main issues and concerns raised in the pre-assessment report and scoping document. A FIP project flyer was also produced at this time to provide further outreach and education of the project to all stakeholders.

Following the initial FIP stakeholder workshop a follow-up meeting was held in October 2009 to develop a draft FIP Action Plan. This provided an opportunity for all stakeholders to contribute what they perceived as the main threats to the fishery and what action needs to be taken. The FIP Action Plan was completed in June 2010 and used as the basis to develop a series of project proposals to address key aspects in the Plan.

In April 2011, the first FIP review meeting was held at the Retreat Gardens, headquarters of the Bahamas National Trust (BNT), Nassau. This provided an opportunity for all stakeholders to participate in a review of the FIP Action Plan and learn about what progress had been made over the past 12 months. This process was been repeated in 2012 and 2013, again at the headquarters of the BNT to review the outcomes of both ongoing and completed projects. In 2014, the fourth FIP review meeting was held at St. Matthews Anglican Church (Nassau). This work is ongoing.

1.2 Aims and Objectives

In 2015, the fifth FIP review meeting was held at the Retreat Gardens, headquarters of the Bahamas National Trust (Nassau) between May 19 and 20. The aims of this meeting were two-fold:

- Present the results of a range of studies initiated from, or related to, the FIP Action Plan
- Critically review and update the previous 2014 FIP Action Plan using the latest MSC Fisheries Certification Requirements (version 2.0).
- Conduct a preliminary risk-based framework (RBF) for key MSC components

The meeting had invited a number of government officials, including Minister V. Alfred Gray from the Ministry of Marine Resources. Unfortunately Minister Gray was unable to attend the meeting and forwarded his apologies. A representative from the Ministry made the key introductory speech on his behalf.

Due to his previous involvement with the FIP, Mr Jay Lugar, Programme Director for the Marine Stewardship Council in Canada was invited to attend the meeting.

Participants were welcomed to the meeting by Felicity Burrows of The Nature Conservancy. A full list of participants and an outline of the meeting agenda are given in Appendix 1 and 2, respectively. An outline of the FIP process and presentations are given in Appendix 3.

1.3 The Standard: Marine Stewardship Council

The MSC is an independent, global, non-profit organization. It works to enhance responsible management of seafood resources, to ensure the sustainability of global fish stocks and the health of the marine ecosystem. It is supported by a broad coalition of those with a stake in the future of the global seafood supply. The MSC harnesses consumer power by identifying sustainable seafood products through an eco-label. Further details can be found on their website (www.msc.org/).

Since the previous FIP review meeting in May 2014, the MSC has now issued a new Fisheries Certification Requirements (version 2.0), which became mandatory for all new fisheries entering the programme after April 2015. This review document updates the previous assessment with the latest MSC FCR, version 2.0.

Mr Jay Lugar, Programme Director for MSC in Canada was invited to the meeting to offer support and guidance, particularly on the latest MSC Fisheries Certification Requirements (version 2.0), where necessary. Mr Lugar's previous attendance at FIP review meetings provided valuable experience to the overall process.

1.4 Unit of Certification and Unit of Assessment

The MSC define a unit of certification as:-

“Target stock(s) combined with the fishing method/gear and practice (including vessel/s) pursuing that stock, and any fleets, or groups of vessels, or individual operators that are covered by an MSC fishery certificate.”

This definition is also necessary to enable the traceability of MSC related products (i.e. lobster) to be audited as part of the MSC chain of custody

The MSC define a unit of assessment as:-

“The target stock(s) combined with the fishing method/gear and practice (including vessel/s) pursuing that stock, and any fleets, or groups of vessels, or individual operators or other eligible fishers that are included in an MSC fishery assessment.”

[Source: MSC Certification Requirements v2.0]

An MSC full assessment will determine the environmental and ecological impacts of each gear type identified in the unit of certification. Within the Bahamas lobster fishery, two gear types will be looking to be certified as different units of assessment (UoA); condominiums (artificial habitats - casitas) and wooden lobster traps:

Unit of Assessment 1: Lobster casita fishery	
Species:	Spiny Lobster <i>Panulirus argus</i>
Geographical Area:	Territorial waters and EEZ of The Bahamas
Method of Capture:	Hook with/without compressor and casita
Stock	Bahamas EEZ (Caribbean)
Management System:	Spiny lobster is widely distributed throughout the Caribbean region and occurs within the Bahamian EEZ under the jurisdiction of the Department of Marine Resources.
Client Group:	Bahamas Marine Exporters Association and WWF-US
Eligible Fishers:	All licensed fishing vessels nominated by Client

Unit of Assessment 2: Lobster trap fishery	
Species:	Spiny Lobster <i>Panulirus argus</i>
Geographical Area:	Territorial waters and EEZ of The Bahamas
Method of Capture:	Wooden lobster trap
Stock	Bahamas EEZ (Caribbean)
Management System:	Spiny lobster is widely distributed throughout the Caribbean region and occurs within the Bahamian EEZ under the jurisdiction of the Department of Marine Resources.
Client Group:	Bahamas Marine Exporters Association and WWF-US
Eligible Fishers:	All licensed fishing vessels nominated by Client

It should be noted that an MSC assessment of a fishery operating with more than one gear type is based on the precautionary approach. Hence the impact of both gears will be assessed separately and the most vulnerable gear will be used to score the fishery within the unit of certification (UoC), and not a weighted average. The impacts of one gear can therefore lead the entire fishery to fail.

1.5 MSC Pre-assessment: A Baseline

In order to review progress made towards a set goal (i.e. MSC Standard), it was important to establish a baseline from which to compare subsequent results. An MSC pre-assessment was conducted in 2009 and provides an indication of the likely scores expected at that time for a range of performance indicators. These are presented in the table below for each Principle.

In 2009, the fishery was deemed not to pass a full MSC assessment. The FIP Review Workshop used these results to monitor progress towards the MSC Standard. It is important to note here that these results are based on the views and opinions of an independent consultant and not that of WWF or an MSC assessment team. The results may therefore be subject to differ in an actual scoring of the fishery.

The fishery is scored through a number of Performance Indicators (PIs), each nested within one of three overarching Principles; (i) Stock Status (ii) Ecosystem Health, and (iii) Governance and Management.

For a fishery to pass a full MSC assessment, the average score from all PIs under each MSC Principle must equal or exceed 80. Where one or more individual PI does not meet a score of 80 or above, a condition may be set to improve the fishery. Conditions are usually set over a 5 year period, before re-certification and will be subject to review through an independent annual surveillance audit. However, if too many PIs score less than 80, the average score for the Principle will fail the fishery outright. It is highly recommended that all efforts are made to progress the fishery towards the highest MSC scores obtainable to minimise the risk of failing.

Within the FIP Action Plan, a high priority refers to a potential MSC score below scoring guidepost 60 (i.e. outright fail), medium priority between SG60 and SG80 (i.e. pass with conditions) and low priority above SG80 (i.e. pass).

Table 1: Summary of a baseline 2009 pre-assessment of the Bahamian lobster fishery showing level of priority for each of the 31 MSC Performance Indicators within three major Principles. High priority refers to a potential MSC score below Scoring Guidepost 60 (fail), medium priority between SG60 and SG80 (pass with conditions) and low priority above SG80 (pass). The original pre-assessment was conducted on Fisheries Certification Requirements version 1.2.

Component	PI No.	Performance Indicator Category	Priority	Timeframe	PI Linkages
Principle 1: Sustainability of exploited stocks					
Outcome	1.1.1	Stock Status	High	Med/ Long	1.1.2; 1.2.1; 1.2.4
	1.1.2	Reference Points	High	Medium	1.1.1; 1.2.1; 1.2.4
	1.1.3	Stock Rebuilding	Low	-	1.1.1; 1.1.2; 1.2.1; 1.2.4
Management	1.2.1	Harvest Strategy	Medium	Long	1.1.1; 1.1.2; 1.2.2; 1.2.4
	1.2.2	Harvest Control Rules and Tools	High	Medium	1.1.1; 1.1.2; 1.2.1; 1.2.3; 1.2.4; 3.1.1; 3.2.3
	1.2.3	Information and monitoring	Medium	Medium	1.1.2; 1.2.1; 1.2.2; 1.2.4
	1.2.4	Assessment of Stock Status	High	Med/ Long	1.1.1; 1.1.2; 1.2.2; 1.2.3
Principle 2: The impact of the fishery on the marine environment					
Retained Species	2.1.1	Status	Low	-	2.1.2; 2.1.3
	2.1.2	Management Strategy	Low	-	2.1.1; 2.1.3
	2.1.3	Information and Monitoring	Medium	Short	2.1.2; 3.1.1
Bycatch	2.2.1	Status	Low	-	2.2.2; 2.2.3
	2.2.2	Management strategy	Low	-	2.2.1; 2.2.3
	2.2.3	Information and Monitoring	Medium	Short	2.2.2; 3.1.1
ETP species	2.3.1	Status	Low	-	2.3.2; 2.3.3
	2.3.2	Management Strategy	Low	-	2.3.1; 2.3.3
	2.3.3	Information and Monitoring	Medium	Short	2.3.2; 3.1.1
Habitat	2.4.1	Status	Medium	Short/ Med	2.4.2; 2.4.3; 3.2.5
	2.4.2	Management Strategy	Medium	Short/ Med	2.4.1; 2.4.3; 3.1.1; 3.2.3
	2.4.3	Information and Monitoring	Medium	Medium	2.4.1; 2.4.2; 2.5.1; 3.1.1
Ecosystem	2.5.1	Status	Medium	Medium	2.5.2; 2.5.3; 3.2.5

	2.5.2	Management Strategy	Medium	Short/ Med	2.5.1; 2.5.3; 3.1.1; 3.2.3
	2.5.3	Information and Monitoring	Medium	Short/ Med	2.5.1; 2.5.2; 3.1.1
Principle 3: The fishery management system					
Governance and Policy	3.1.1	Legal/Customary Framework	Medium	Short	1.2.2; 2.1.3; 2.2.3; 2.3.3; 2.4.2; 2.4.3; 2.5.2; 2.5.3
	3.1.2	Consultation, Roles & Responsibilities	Medium	Short	3.2.2
	3.1.3	Long Term Objectives	Medium	Short	2.4.2; 3.2.4
	3.1.4	Incentives for Sustainable Fishing	Medium	Short	3.2.5
Fishery Specific Management System	3.2.1	Fishery Specific Objectives	Medium	Short	3.1.3; 3.2.4; 3.2.5
	3.2.2	Decision Making Processes	Medium	Short	3.1.2
	3.2.3	Compliance and Enforcement	Medium	Medium	1.2.2; 3.1.1; 3.1.2; 3.2.1
	3.2.4	Research Plan	Medium	Short	3.1.3; 3.2.1
	3.2.5	Mgt. Performance Evaluation	High	Med/ Long	1.1.1; 2.1.1; 2.2.1; 2.3.1; 2.4.1; 2.5.1; 3.1.4; 3.2.1

1.6 FIP Action Plan: Overview

The original FIP Action Plan was finalised in June 2010 and identified a range of tasks within four major categories that would promote sustainable utilisation of the resource and improve fisheries management. In turn the Action Plan would help elevate the scores of certain high priority performance indicators within an MSC assessment. The four major categories include:

- (i) Data Collection
- (ii) Education and Outreach
- (iii) Enforcement (MSC)
- (iv) Assessment and Review

The FIP Action Plan does not include detailed terms of reference or potential sources of funding for each task. Instead, these have been identified and developed separately with relevant stakeholders.

In 2011, by far the most critical issues identified as high priorities were associated with Principle 1. In particular these referred to stock status (PI 1.1.1), reference points (PI 1.1.2), harvest control rules and tools (PI 1.2.2), and stock assessment (PI 1.2.4). Without further improvements, the fishery was expected to fail an MSC assessment on these key topics. By May 2012, results from a stock assessment were available to determine the status of stock biomass in addition to the development of a draft set of HCRs. Based on the recommendations of external reviewers a new stock assessment model was developed during 2013 based on age/size structure of the population. The preliminary results were presented during the 2014 FIP review meeting but were not considered 'final' to use for scoring the fishery.

In addition to the development of a new stock assessment, a range of other tasks have been the focus of FIP activities since 2013, including impact of the lobster trap fishery on a range of P2 performance indicators (i.e. other retained, bycatch and ETP species, habitat status and ecosystem impacts) and governmental approval of the HCRs and development of the lobster FMP (see Table 2).

Since 2014, this review of progress is presented by MSC Performance Indicator within each Principle, and not simply a review of each task and activity. Hence the performance of FIP activities (or tasks) may be relevant to more than one performance indicator and will be addressed under multiple PIs, where appropriate. This review has also been updated to review each task against the latest MSC FCR V2.0 requirements and has been reflected in 2015 FIP Action Plan.

Table 2: Outline of 2015 FIP Action Plan for the Bahamas Lobster

Task	Description	Responsible	Deadline	Status
1.1	Review and update existing data collection procedures			
1.1.1	Processors to include categories for all retained and bycatch (discarded) species on data capture forms and provide individual weight information to DMR to inform the stock assessment.	BMEA, DMR	TBD	High
1.1.2	DMR to review data collection forms and data (species recorded, geographic location - statistical grid, #gear etc)	DMR	TBD	High
1.2.3	DMR to improve data collection - all major islands , routine size information etc	DMR	TBD	High
1.2.4	Continue to update data systems and review data quality etc	DMR	Ongoing	High
1.2	Ongoing data collection from processors			
1.2.1	DMR to continue the data collection from processors	BMEA	Ongoing	High
1.3	Update and maintenance of fisheries information system - Hire FIP Assistant position to be seated in DMR offices – REMOVED			
1.4	Research and monitoring of lobster trap fishery			
1.4.1	Develop a research project to provide a series of stratified random catch samples from observers placed onboard trap vessels to monitor the level of bycatch and ETP species, and look at level of compliance with use of biodegradable mesh panels.	TNC to coordinate with DMR, BMEA, trap fishers, College of the Bahamas	TBD	High
1.4.2	Conduct the trap bycatch study	TNC, DMR, BMEA, trap fishers, College of the Bahamas	Complete	
1.4.3	Results evaluated by DMR/ SLWG	BSLWG and DMR	Complete	
1.5	Fisheries independent research on impacts of fishery on habitats and ecosystem			
1.5.1	Review Lester Gittens' terms of reference for his PhD thesis and identify sources of financial support for part of his studies.	BMEA, WWF, DMR, TNC	Complete	
1.5.2	Consolidate environmental baseline information with the results of the bycatch research and monitoring study	Mr. L Gittens (DMR)	Complete	

Task	Description	Responsible	Deadline	Status
	(listed above)			
1.5.3	Implementation of fisheries research of habitat and ecosystem impacts	Mr. L Gittens (DMR)	Ongoing until 2016	High
1.5.4	Existing information and monitoring on habitats and ecosystems (MPA) should be collected for the assessment team to demonstrate impact of fishery is low/negligible	TBD	10-Oct-15	High
1.5.5	Provide summary of current ecosystem research by Mr Gittens (not publically available)	Mr. L Gittens (DMR)	10-Oct-15	High
2.1	Communications Strategy Memo/ Information			
2.1.1	To develop a Communications Strategy Memo (CSM) as part of a Communications Plan.	WWF	On Hold	
2.1.2	Review CSM to develop strategies	WWF	On Hold	
2.2	Ensure sufficient data checks to support BMEA zero tolerance policy			
2.2.1	BMEA to continue data checks in 2015/16 season and continue outreach	BMEA	Ongoing	High
2.3	Fishermen education and outreach on management measures			
2.3.1	Develop outreach program for fishermen (HCR/FMP etc)	WWF/TNC/DMR/BM EA/BREEF	Ongoing	High
2.4	Restaurant education and outreach on management measures			
2.4.1	Develop outreach program for restaurants	WWF/TNC/DMR	On Hold	
2.5	Education and outreach program for schools			
2.5.1	Develop outreach program for schools	DMR/ NGOs	On Hold	
3.1	Review existing MCS strategy			
3.1.1	To provide a comprehensive review of the existing MCS strategy and continue to collect and summarise key MCS information and data	DMR, ACP Fish II Programme	Ongoing	High
3.1.2	Government strategy to reduce and eliminate IUU fishing	DMR, ACP Fish II Programme	Complete	
3.1.3	Identify what other activities need to take place to develop a plan to eliminate IUU	WWF-lead w/DMR & BMEA	Ongoing	High
3.1.4	IUU Risk Assessment	Consultant	Complete	

Task	Description	Responsible	Deadline	Status
3.1.5	Analyse the number of offences committed against indicators of control activity to demonstrate that sanctions are at a level required to deter IUU fishing.	TBD	30-Dec-16	Medium
3.1.6	Obtain the level of tolerance of undersized lobster from each processor to determine what is deemed an acceptable level of non-compliance.	DMR/BMEA	30-Dec-16	Medium
3.1.7	Compare economically the net gain for illegal fishing when detected against operating costs and sanction level to show the level of sanctions are appropriate for the value of fisheries of the Bahamas	TBD	30-Dec-16	Medium
3.2	Compile data on MCS activities			
3.2.1	Compile data on MCS activities - inspections/ infringements etc - Linked to EU ACP FISH2 project (part addressed in IUU risk assessment)	DMR, ACP Fish II Programme	30-Oct-15	High
3.3	Audit restaurants for out-of-season lobster			
3.3.1	A review of the Communication Strategy Memo (CSM) will help determine the requirements of this task	WWF/ TNC	On Hold	
3.3.2	Review/analyze restaurant pledges and surveys completed at Bahamas Food Show- Sept 2013.	WWF	Complete	
3.3.3	Develop program to audit restaurants for undersized/ out-of-season lobster.	WWF-lead with TNC/DMR/BMEA	On Hold	
3.4	Pilot study for IUU fishing Smartphone App			
3.4.1	To conduct pilot study to determine utility of Smartphone IUU App	DMR/BMEA/ consultant	Complete	
3.4.2	Review results of pilot study and determine follow-up action	WWF-lead w/DMR & BMEA	Complete	
4.1	Spiny Lobster Working Group			
4.1.1	Develop and send the letter with confirmed participants to Minister Gray	Mr. M. Braynen (DMR)	Complete	
4.1.2	SLWG to summarise meetings and put in public domain - explain what has been discussed and outcome, including reasons why and indicate how stakeholders can get in touch (DMR website). Include that the SLWG uses the precautionary approach in their decision-making.	SLWG	31-Aug-15	High

Task	Description	Responsible	Deadline	Status
4.1.3	SLWG members to review current ETP status (turtle and shark) and habitats to determine level of impact from the fishery and reasons for any action required (or not) to review or develop new management measures/ strategy and adequate level of monitoring (may be added to harvest strategy doc).	SLWG	10-Oct-15	High
4.1.4	SLWG continue to review performance of fishery	SLWG	Ongoing	High
4.2	Demonstrate the effectiveness of MPAs			
4.2.1	To conduct research to help determine how MPAs can help protect lobster and provide other benefits	DMR, others	On Hold	
4.3	Development and adoption of stock assessment and HCRs			
4.3.1	Submit peer-reviewed stock assessment and HCRs to SLWG	DMR	Complete	
4.3.2	Adoption of HCR by the government	Minister Gray/ WWF/ MRAG	Complete	
4.4.	Review of fisheries legislation, fines and penalties			
4.4.1	To undertake a review of current legislation, fines and penalties to improve fisheries compliance	DMR, ACP Fish II Programme	Complete	
4.2.2	Review outputs from ACP FISH II and FAO-TCP projects	DMR	Complete	
4.2.3	Implement relevant outputs from ACP FISH II and FAO projects	DMR	Ongoing	Medium
4.5	Review, update and adoption of the FMP. FMP needs to include:			
	• Legal framework			
	• Consultation, roles and responsibilities			
	• Fishery specific objectives of the lobster fishery (+ long term objectives of the fishing sector)			
4.5.1	Review and update management performance document	SLWG	Complete	
4.5.2	Review FMP with stakeholders and incorporate comments	SLWG and TNC	30-Dec-15	High
4.5.3	Adoption of FMP by the government	Minister Gray	31-Dec-15	High
4.5.4	Review and approve MPR and HS documents (include short/long-term objectives)	DMR	31-Oct-15	High
4.6	Develop stakeholder advocacy to implement lobster FMP			
4.6.1	Develop letter of support from stakeholders to government to encourage adoption of FMP	BMEA/WWF/TNC & NGOs	15-Dec-15	Medium
4.7	Finalise 2014 stock assessment			

Task	Description	Responsible	Deadline	Status
4.7.1	Conduct final testing of model, including range of uncertainties	TBC	31-Oct-15	High
4.7.2	Conduct internal and external review of assessment	TBC	31-Dec-15	High

2 REVIEW OF PROGRESS

2.1 Implementation of the FIP Action Plan

To facilitate implementation of the FIP Action Plan, development of a Communications Plan (CP) had been identified at the start of the Project as an important task. While not directly required for the MSC assessment, a CP would help improve the overall effectiveness and efficiency of the FIP program by monitoring the development and uptake of key activities, for example. However, while separate CPs have been developed by NGOs to better manage their individual education and outreach programs (e.g. Friends of the Environment), this has not been developed for the FIP Action Plan as a whole. It was agreed at the 2012 review meeting that due to time and other constraints, an overall CP for the FIP Action Plan was no longer deemed necessary. Instead, efforts should focus on continuing to develop education and outreach programs for improved lobster management with various stakeholders, which have proven very successful in the past.

Due to concerns raised over the high priority of Performance Indicators (PIs) in Principle 1, the range of FIP projects initiated during 2010 and 2011 focused mainly around these issues that would otherwise be expected to cause the fishery to fail an MSC assessment outright, i.e. score less than 60 in one or more PI. These continue to be extended and updated during the past 12 months, as more information and data have become available and a new stock assessment model has been developed. Further details of the tasks completed under P1 are given in section 2.2 below.

More recently, attention has been given to address P2 and P3 related issues. These include for example, analysis of potential bycatch in the lobster trap fishery and development and approval of a harvest strategy document and management performance review document. These are described in more detail in sections 2.3 and 2.8 below.

In addition, the MSC has updated the Certification Requirements document in October 2014¹(version 2.0), which provides specific guidance how to score the fishery. This includes, for example, a revised Risk Based Framework (RBF) methodology first introduced in the 2011 meeting report² that can be used to evaluate and score specific outcome based Performance Indicators within the MSC default assessment tree when data-deficiency is encountered (see Table 3).

Due to the historic volume of catch and effort information and development of a stock assessment, the RBF cannot be used address P1 issues. However, version 2.0 of the Certification Requirements enables the RBF to be used for a number of PIs under P2 (Table 3).Special guidance for scoring PIs in cases where the RBF can be used is discussed within relevant P2 sections of this report.

¹ <https://www.msc.org/documents/scheme-documents/fisheries-certification-scheme-documents/fisheries-certification-requirements-version-2.0>

² Review of the Bahamian Lobster Fishery Improvement Project 2011, 27-28 April 2011, Retreat Gardens, Nassau. Report written by MRAG Ltd for WWF-US.

Table 3: Overview of RBF methodologies, Performance Indicators and implications for non-RBF Performance Indicators for Principles 1, 2 and 3 (source: MSC FCR v2.0).

Performance Indicator	RBF	Notes
1.1.1 Stock status	Yes	CA and PSA shall both be undertaken if scoring using the RBF.
1.1.2 Stock rebuilding	No	If the RBF is used to score PI 1.1.1, this PI is not scored.
1.2.1 Harvest strategy	No	Score as normal.
1.2.2 Harvest control tools and rules	No	Score as normal.
1.2.3 Information/monitoring	No	Score as normal.
1.2.4 Assessment of stock status	No	If RBF is used to score PI 1.1.1, a default score of 80 shall be awarded to this PI.
2.1.1 Primary species outcome	Yes	PSA alone shall be undertaken if using the RBF.
2.1.2 Primary species management strategy	No	Score as normal.
2.1.3 Primary species information	No	If the RBF is used to score PI 2.1.1, use the RBF alternative within scoring issue (a).
2.2.1 Secondary species outcome	Yes	PSA alone shall be undertaken if using the RBF.
2.2.2 Secondary species management strategy	No	Score as normal.
2.2.3 Secondary species information	No	If the RBF is used to score PI 2.2.1, use the RBF alternative within scoring issue (a).
2.3.1 ETP Species outcome	Yes	PSA alone shall be undertaken if using the RBF.
2.3.2 ETP Species management strategy	No	Score as normal.
2.3.3 ETP Species information	No	If the RBF is used to score PI 2.3.1, use the RBF alternative within scoring issue (a).
2.4.1 Habitats outcome	Yes	CSA alone shall be undertaken if using the RBF.
2.4.2 Habitats management strategy	No	Score as normal.
2.4.3 Habitats information	No	If the RBF is used to score PI 2.4.1, use the RBF alternative within scoring issues (a) and

		(b).
2.5.1 Ecosystem outcome	Yes	SICA alone shall be undertaken if using the RBF.
2.5.2 Ecosystem management strategy	No	Score as normal.
2.5.3 Ecosystem information	No	Score as normal.
Principle 3 PIs	No	The RBF shall not be used to score any PIs within Principle 3.

Back in 2012, the government of The Bahamas undertook a series of bilateral meetings with national competent authorities in the Dominican Republic (DR) to address potential concerns over the level of international IUU fishing occurring in areas of national jurisdiction. This was followed up in subsequent years, but little evidence is available from DR to verify that the proposed set of measures, including a vessel monitoring system has been put in place and are deemed to be effective and monitoring and controlling DR flagged vessels in Bahamian waters. In response to this and to help address other maritime issues, the Royal Bahamas Defence Force (RBDF) has procured a number of monitoring, control and surveillance (MCS) platforms that can be used for fisheries related tasks, including a reduction of IUU fishing activities. In addition to the procurement of MCS means, an IUU risk assessment has been performed to help better understand the potential risk of IUU fishing activities within the Bahamas. Further details are discussed in section 2.8.2.

Given some of the uncertainty surrounding the level of catch in the lobster trap fishery, including other retained species, bycatch and potential ETP species, a pilot study was first established during March 2013 to monitor catches taken by a small sample in the lobster trap fishery. This research and monitoring of the lobster trap fishery was extended during the 2014/15 season and the preliminary results presented at the 2015 FIP review meeting.

In December 2012, the Bahamas government formally approved the formation of the Spiny Lobster Working Group (SLWG) to support management of the lobster fishery, with members appointed in February 2013. The inaugural meeting was held in October 2013. The main purpose of the SLWG is to involve appointed members with providing the government with advice, feedback and recommendations regarding the issues and actions related to the management of the spiny lobster fishery. During 2014, SLWG reviewed and provisionally accepted two new reports: (i) harvest strategy report and (ii) management performance review document that provides a summary of current management practices measures and their performance.

During spring 2015, the Bahamas government formally approved the lobster harvest control rules (HCRs) that will be used to manage the fishery according to changes in stock status. To ensure the fishery is managed on a sustainable basis, the stock assessment will need to be updated on an annual basis.

The overall structure of this 2015 FIP review is very similar to the previous reports, and provides an update of the ongoing tasks within the FIP Action Plan, while reflecting recent changes in PIs within the MSC Certification Requirements (version 2.0).

This review provides a specific breakdown on how each Performance Indicator (PI) is likely to be scored at the level of a scoring issue. For example, PI1.1.1 (stock status) has two scoring issues to address for each Performance Indicator Scoring Guideline (PISG): (a) stock status and (b) stock status in relation to target reference points (see Table 1). Therefore, in order for the fishery to score 80 (pass), it must first meet the scoring issue under PISG 60 (i.e. 'It is **likely** that the stock is above the point where recruitment would be impaired') and both scoring issues under PISG 80 (i.e. 'It is **highly likely** that the stock is above the point where recruitment would be impaired' and 'The stock is at or fluctuating around its target reference point'). If the fishery failed to meet one of the two PISG 80 scoring issues, the fishery would score 70. Further guidance on terms such as 'likely' and 'highly likely' are explained in more detail within the MSC Assessment Guidelines document³.

In this review, the PISGs have been highlighted in green if the fishery is expected to meet the scoring guidepost. This approach provides considerable detail in the FIP review process and enables a critical analysis of what specific issues might be obstructing the fishery from reaching the MSC Standard at this time. A summary of the likely score for each PI is provided. A weighted average score has then been calculated based on the spreadsheet template provided by the MSC⁴.

Table 4 : Example of PI 1.1.1 stock status PISGs (MSC FCR V2.0)

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Stock status	It is likely that the stock is above the point where recruitment would be impaired.	It is highly likely that the stock is above the point where recruitment would be impaired.	There is a high degree of certainty that the stock is above the point where recruitment would be impaired.
b. Stock status in relation to target reference points		The stock is at or fluctuating around its target reference point.	There is a high degree of certainty that the stock has been fluctuating around its target reference point, or has been above its target reference point, over recent years.

The following sections provide an update of current information and data available presented during the 2015 FIP Review Meeting for each Principle and a discussion on the likely scoring of the PISGs.

³<https://www.msc.org/documents/scheme-documents/fisheries-certification-scheme-documents/fisheries-certification-requirements-version-2.0>

⁴ See <http://www.msc.org/documents/scheme-documents/forms-and-templates/msc-fishery-assessment-scoring-worksheet/view>

2.2 Principle 1: Stock Status and Harvest Strategies

Under the latest MSC Certification Requirements V2.0, six Performance Indicators (PIs) are now scored under Principle 1 (P1) related to stock status and harvest strategies (Figure 1)⁵. In 2009, the MSC pre-assessment indicated that four performance indicators would score below 60 and were given a high priority within the FIP Action Plan (PIs 1.1.1; 1.1.2; 1.2.2 and 1.2.4).

It should be noted that within the new MSC Certification Requirements, PI1.1.2 (Reference Points) has been removed and incorporated into the Harvest Control Rules and Tools (PI1.2.2). This has important implications for scoring the fishery and is highly likely to impact the score of Principle 1. In order to minimize the risk of scoring less than an average score of 80, a number of key recommendations are provided in section 2.2.4.

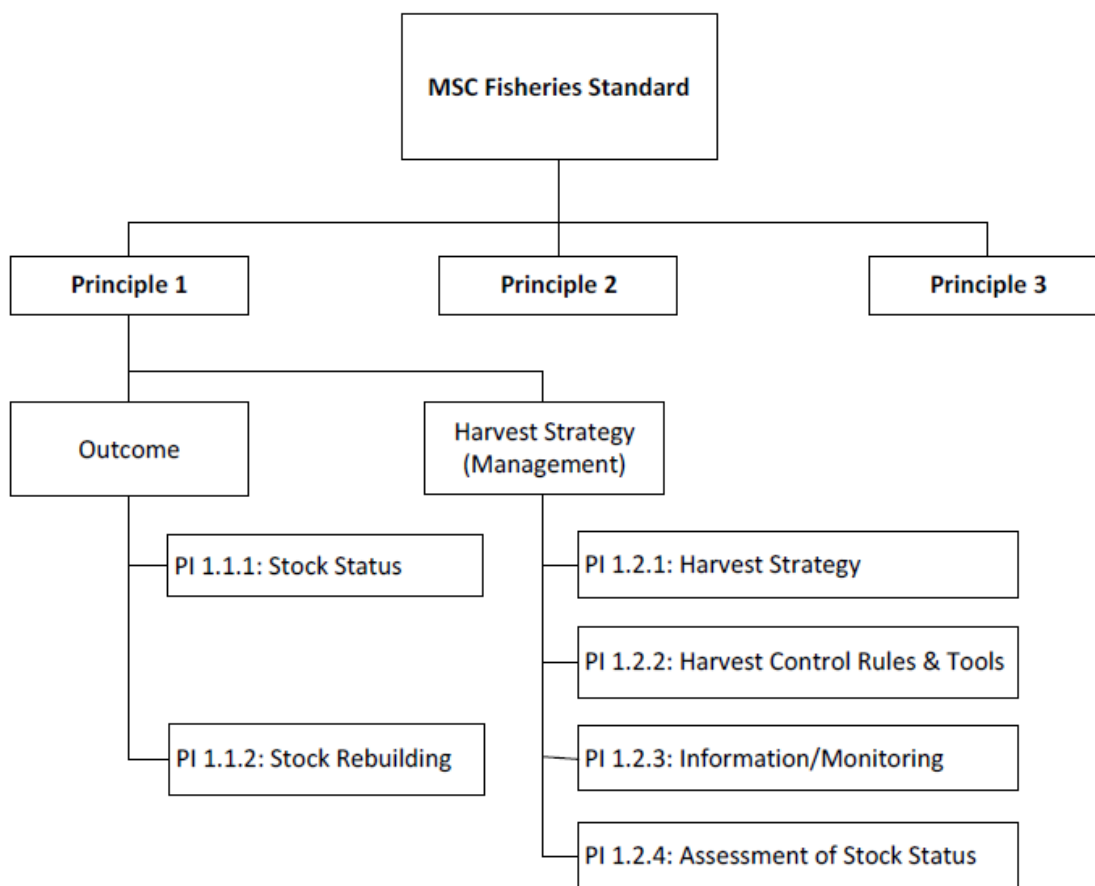


Figure 1 : MSC Principal 1 default tree structure (MSC CR, version 2.0)

To determine the status of the stock, it is necessary to define the distribution and abundance of the stock exploited by the fishery. Within the pre-assessment, the unit of certification indicated that spiny lobster has a Pan-Caribbean stock distribution. However, more recent scientific information about the likely dispersal and transport

⁵ 2009 MSC pre-assessment indicated that that stock was not in need of rebuilding (PI1.1.3) and therefore only six PIs had been scored in this fishery.

patterns of lobster larvae suggest that the stock may be considered a single management unit or stock with a self-recruiting population within The Bahamas⁶. This has important implications for management of the stock, which does not require complex international multi-lateral agreements and simplifies management of the stock.

In 2010, the first stock assessment of The Bahamas lobster was conducted by Dr. Paul Medley using export data obtained from processors to establish the current stock status in relation to biological reference points. The stock assessment was first reviewed at the 2010 CRFM meeting, which suggested developing alternative recruitment series based on different fisheries. Such recruitment series exist for Florida and Cuba. The stock assessment was further updated in 2011 using additional data and also provided guidance on the development of harvest control rules and tools to determine management actions with varying levels of stock abundance.

In 2012, the stock assessment was updated with the latest available data and was presented with a number of scenarios to represent different sensitivities in the model⁷. The sensitivities which were considered allowed for variations in natural mortality, an alternative catch history allowing for unrecorded catches and alternative levels of mean recruitment. The initial inputs to the model (i.e., prior probabilities) were found to have a significant impact on the stock assessment results. In addition, it is known that significant catch data are missing from the available data set. Therefore, these sensitivity analyses were used to develop a range of equally likely cases which could be used to test the robustness of harvest control rules.

The results of the 2012 assessment showed that there is no evidence that the Bahamas spiny lobster stock biomass is overfished nor that overfishing is occurring. One of the most precautionary sensitivity analysis used included an additional 56% in catch due to potential IUU fishing and a recruitment pattern similar to that observed in Florida. The results of these analyses show that the adult biomass (SSB) is above that required to produce the Maximum Sustainable Yield (SSB_{MSY}). Further to this, the current level of fishing mortality (F) is below that required to obtain MSY (i.e. F_{MSY}), and indicate the fishery does not have overfishing.

A technical review of the Bahamas stock assessment was conducted in June 2012 by two international experts in lobster stock assessment, namely Dr. Robert Muller (Florida, USA) and Dr. Raphael Puga (Cuba). In summary the reviewers considered 'the stock assessment and the projection model are appropriate for evaluating management options and that the management process should proceed to the next level'. However, this view was conditional on further research and development of improved fishery monitoring.

Since 2013 a new modeling approach has been under development to incorporate amongst other things, information on age/size structure in the assessment⁸. The preliminary results of this work were introduced and discussed at the 2014 FIP review meeting. It was concluded that the new stock assessment model successfully fits the

⁶ Kough AS, Paris CB, Butler MJ IV (2013) Larval Connectivity and the International Management of Fisheries. *PLoS ONE* 8(6): e64970. doi:10.1371/journal.pone.0064970

⁷ Medley P.A.H. and Gittens L.G. 2012. 2012 Bahamas spiny lobster stock assessment. Department of Marine Resources, Nassau, Bahamas. 58pp.

⁸ Medley P.A.H. 2014. The Bahamas spiny lobster stock assessment 2013/14. 50pp.

available data but the diagnostics indicate that the preliminary assessment may not be reliable and further work on the model structure is required. In particular, some decisions on the model are subjective, and therefore must be made by a group of scientists (“internal review”) to ensure they are not biased and can be defended. Decisions include, for example, the way selectivity is modelled and the weight given to different information sources. To date (June 2015), the model has not been formally externally reviewed and remains an important ongoing task.

While these preliminary results cannot be used for scoring the fishery at this time (and are therefore not presented here), the latest model structure does indicate that the productivity of the stock can be estimated without reference to external information, which is an important improvement on the previous stock assessment.

Furthermore, the preliminary results for the current model suggest the harvest control rule will contribute to sustainable fishing. However, it was noted that the latest preliminary results from the new model are more pessimistic than the 2012 assessment and it remains uncertain at this stage whether the HCR requires further refinement to meet the precautionary approach, dependent on other management actions. For example, if IUU is significantly reduced compared to 1988-2012, the proposed HCR would likely continue to be appropriate. Work on the stock assessment and monitoring data remains ongoing.

It is important to note that on-going development of the stock assessment forms part of the harvest strategy and will be required in the long-term. That is, the previous assessment, external review and new assessment are part of the harvest strategy cycle and follow best practice. During such a process, if conducted well, new risks to the sustainability of the fishery are likely to come to light and must be dealt with. Therefore, such new risks only present a problem for the certification if management response to the scientific advice is inappropriate. Identification of the risk itself should be seen as a positive outcome.

2.2.1 Management Outcomes

PI1.1.1 Stock Status

Total PI Score: 80-90

The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing.

At present, the results of the new 2013/14 stock assessment are deemed preliminary and although the overall trends in stock status are similar to those of the 2012 assessment, the results are more pessimistic. It is unlikely that the scores presented here will be subject to change although there is a risk that a review and finalization of the assessment may result in some additional management action to meet the SG80.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Stock status relative to recruitment impairment	It is likely that the stock is above the point where recruitment would be impaired (PRI).	It is highly likely that the stock is above the PRI.	There is a high degree of certainty that the stock is above the PRI

Based on the results of the 2012 independent stock assessment and peer review, the stock is 'highly likely' to be above the point where recruitment would be impaired. Since the latest stock assessment considers growth characteristics of the stock (i.e., length-based or age structured model), the scoring issue may be extended to 'a high degree of certainty' if and when the assessment is finalized and peer reviewed. However, without any evidence of overfishing, it is likely the fishery will meet the SG80.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Stock status in relation to achievement of Maximum Sustainable Yield (MSY)		The stock is at or fluctuating around a level consistent with MSY.	There is a high degree of certainty that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.

The results of the independent stock assessment review indicate that the stock is 'at or fluctuating around its target reference point'. Based on the results of the 2012 sensitivity analysis, it could be argued that the adult stock biomass has been above its target reference point over recent years sufficient to meet SG100 (i.e. $SSB/SS_{BMSY} > 1$). However, given the 2012 stock assessment does not consider growth characteristics, and the preliminary results using the new stock assessment methodology (2014) are more pessimistic at this time, there is a risk that this score may be downgraded based on a lack of a 'high degree of certainty' to meet SG100.

PI1.1.2 Reference Points

As indicated above, this PI is now obsolete under MSC Certification Requirements version 2.0 and included within Harvest Control Rules (PI1.2.2).

PI1.1.2 Stock Rebuilding

Where the stock is depleted, there is evidence of stock rebuilding.

Based on the outcome of the 2012 stock assessment and external peer review, the stock is not deemed to be depleted and therefore this performance indicator is not scored.

Important note: If the status of the stock using the new 2014 stock assessment was to show it was depleted (i.e. consistently below the target reference point and at a point at which recruitment is impaired and is depleted) the fishery would require a rebuilding plan and this PI would then need to be scored. However, at the present time, the preliminary results using the 2014 stock assessment methodology do not show the stock to be depleted. This will continue to be reviewed on an annual basis.

2.2.2 Harvest Strategy (management)

Scoring under this performance indicator has not changed since 2013.

PI1.2.1 Harvest Strategy

Total PI Score: 70 – 85

There is a robust and precautionary harvest strategy in place

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Harvest strategy design	The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG80.

The harvest strategy is to achieve levels of escapement from the fishery so that the spawning stock is not depleted. It will depend upon a measure of the recruitment each year, and export quota (or other appropriate catch limit). Although it could be argued it is designed (SG100), there remain some potential issues which might prevent it meeting SG100. Notably, only exports are controlled, so local consumption is uncontrolled and IUU may be significant. With the restaurants involved in the SLWG and education and outreach plans, this PI scoring issue would be expected to meet the SG80. It has been suggested that more precise management controls might be needed (e.g. by bank + agreements with Cuba/Florida etc.) to indicate the strategy has been specifically designed for the lobster fishery to meet the SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Harvest strategy evaluation	The harvest strategy is likely to work based on prior experience or plausible argument.	The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.

The revised strategy using the latest HCRs will only have been in place for a short time (< 2 years), so meeting the SG80 remains uncertain. However, with catches set at precautionary levels and evidence of good historical information, it may be adequate to support SG80, based on minimum size, restrictions on landing berried females and a closed season.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Harvest strategy monitoring	Monitoring is in place that is expected to determine whether the harvest strategy is working.		

It can be argued that the Spiny Lobster Working Group (SLWG), which includes stakeholders from industry and government, is carrying out monitoring to determine whether the harvest strategy is working (SG60).

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
d. Harvest strategy review			The harvest strategy is periodically reviewed and improved as necessary.

As above, it can be argued that the SLWG has already begun to carry out reviews and improvements (SG100), but if the SG80 is not met on any previous scoring issue, this will not count. However, if the previous SG80 can be met, the score may reach 85. Public evidence from SLWG meetings (minutes etc.) showing that the SLWG actively reviews the harvest strategy and has improved it (e.g. development of the HCR), are currently being considered and would be invaluable in achieving this higher score.

Given that the target species is not a shark, scoring issue (e) Shark finning has not been included in the scoring. In addition, the gear used within the UoA does not select significant volumes of unwanted catches of lobster. Scoring issue (f) Review of alternative measures to minimize unwanted catch is not deemed appropriate (MSC scoring guidelines v2.0, October 2014).

Risks

It has previously been highlighted that the biggest risk to the harvest strategy is activities undermining the management control (IUU catch, local consumption, possible illegal exports), and the definition of a stock. In the latter case, there is a risk of depleting some of the local populations but there is recent scientific evidence to suggest the lobster population in The Bahamas may be part of a separate stock that is self-recruiting.

The risks associated with IUU fishing activities are considered under P3.

PI 1.2.2 Harvest Control Rules and Tools

Total PI Score: 80-85

There are well defined and effective harvest control rules in place

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. HCRs design and application	Generally understood HCRs are in place or available that are expected to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	Well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock fluctuating at or above a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, most of the time.

A set of Harvest Control Rules (HCRs) have been developed and are well defined. These have been refined following stakeholder consultation and approved by the Spiny Lobster Working Group (SLWG). The HCRs were formally accepted by the government of The Bahamas in early 2015, and if correctly implemented, the fishery is highly likely to meet the SG80 level. Further to this, the results of the 2012 assessment suggest that the stock has been consistently above the target reference point that might provide sufficient evidence to meet SG100. However, the results of the revised 2014 assessment are more pessimistic and it is unclear whether the results will confirm the same trends. It is therefore remains uncertain whether the fishery will meet SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. HCRs robustness to uncertainty		The HCRs are likely to be robust to the main uncertainties.	The HCRs take account of a wide range of uncertainties including the ecological role of the stock, and there is evidence that the HCRs are robust to the main uncertainties

The HCR has undergone simulation testing for a wide range of uncertainty as part of the external peer review to provide sufficient evidence to meet SG80. There is a risk that these may not be considered wide enough to meet the SG100, but if the full assessment team can indicate what additional uncertainties are thought might be important these might be completed before the fishery is scored.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. HCRs evaluation	There is some evidence that tools used or available to implement HCRs are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the HCRs.

It is envisaged that evidence of tools would be based on exports, which is sufficient to meet SG80. However, due to their recent development, it is uncertain whether sufficient evidence exists to clearly demonstrate their effectiveness to meet SG100, but this is likely to occur over the next few years. This score has not changed since 2012.

PI1.2.3 Information / Monitoring

Total PI Score: 65-80

Relevant information is collected to support the harvest strategy

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
(a) Range of information	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data are available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly relevant to the current harvest strategy, is available

There is a risk that the information on stock structure (or all parts of the fishery) is insufficient to meet SG80, although new evidence is providing support for a single stock within Bahamian waters (Kough et al., 2013). In addition, if the harvest strategy is made overall sufficiently precautionary and there is a continuation of existing data collection systems and proposed developments of data collection to support the stock assessment, these would be likely to meet SG80. The range of information is not considered comprehensive to meet SG100 (e.g. number and location of traps and condominiums).

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
(b) Monitoring	Stock abundance and UoA removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of the inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.

Historically, monitoring and information within the lobster fishery has been poor and highly unlikely to meet SG80. Although these issues have now been corrected and are regularly monitored sufficient to meet SG80, there is still a risk that these data are insufficient to develop a reliable index of stock abundance in the long term.

Additional information to establish spatial fishing location and routine length-frequency information would be expected to meet SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
(c) Comprehensiveness of information		There is good information on all other fishery removals from the stock.	

Catches that are poorly recorded are those not sold to the processors and the IUU catch. Unless these can be demonstrated that they are small, there is a significant risk that the fishery will not meet the SG80.

PI 1.2.4 Assessment of stock status

There is scope to improve existing scores through the development and adoption of the latest stock assessment (developed in 2014), which now takes into account the major features relevant to the biology of the species.

Total PI Score: 85-95

There is an adequate assessment of the stock status

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Appropriateness of assessment to stock under consideration		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.

The stock assessment is highly likely to meet the SG80. Since the 2012 assessment does not model age structure, only approximately taking account of growth, sex or maturity (length-based or age structured), this is unlikely to meet SG100. However, it is more likely that the new stock assessment, which now takes into account growth, sex and gear selectivity, could meet SG100. Neither assessment models individual populations on a bank-by-bank basis however.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Assessment approach	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	

The stock assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated. It is likely that the fishery will meet the requirements at both SG60 and SG80.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Uncertainty in the assessment	The assessment identifies major sources of uncertainty.	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 Bayesian, and will therefore be expected to meet SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
d. Evaluation of assessment			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.

Both the previous 2012 and latest 2014 assessment method will have been tested and shown to be robust, and some alternative hypotheses and approaches will have been explored (e.g. alternative recruitment patterns, different levels of total catch to include risk of IUU fishing etc). However, these have not been comprehensive and it is therefore unlikely that this will meet the SG100. It is highly recommended that these be undertaken as part of an additional evaluation exercise to score maximum points.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
e. Peer review of assessment		The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed

The 2012 stock assessment has already undertaken an external peer review in 2010 (CRFM) and has completed a rigorous external peer review with international experts. This is expected to meet SG100.

The latest assessment developed in 2014 will eventually need to undertake a similar process to meet SG100.

2.2.3 Summary of progress under P1

The following table provides an overview of the range of likely scores given to each PI under P1 using the latest MSC scoring guidelines (version 2.0). The reduction on the number of Performance Indicators has had an impact on the scoring such that there is now a risk that the fishery will not meet the standard (score 76.7).

To ensure maximum scores are obtained in the fishery, every effort should be made to continue to address PI1.2.1 Harvest Strategy and PI1.2.3 Information/ Monitoring, but also to ensure **all other PIs score a high as possible**. To facilitate this, a number of key recommendations are given below.

Performance Indicator		Likely score
1.1.1	Stock Status	80-90
1.1.2	Stock Rebuilding	Not applicable
1.2.1	Harvest Strategy	70 – 85
1.2.2	Harvest Control Rules and Tools	80 – 85
1.2.3	Information/ Monitoring	65 – 80
1.2.4	Assessment of Stock Status	85 – 95
Total		76.7 – 87.5

2.2.4 Possible Conditions under Principle 1

Two possible Conditions may be given in the fishery:

PI 1.2.1: Harvest strategy

- (b) The harvest strategy may not have been fully tested but **evidence** exists that it is achieving its objectives.

Close gaps in the harvest strategy (IUU catch, local landings, bank-specific monitoring/HCR, international agreements). (Tasks 1.1 and 1.2, 2015 FIP Action Plan)

PI 1.2.3 Information and monitoring

- (b) Stock abundance and UoA removals are **regularly monitored at a level of accuracy and coverage consistent with the harvest control rule**, and **one or more indicators** are available and monitored with sufficient frequency to support the harvest control rule.

- (c) There is good information on all other fishery removals from the stock.

Improve catch and effort data (e.g., IUU catch, local landings (all major islands), catch location, routine size information, more accurate fishing effort records etc). (Tasks 1.1 and 1.2, 2015 FIP Action Plan)

2.2.5 Recommendations under Principle 1

A number of key recommendations are given below to address P1 issues.

- The Bahamas Spiny Lobster Working Group (SLWG) has now been established, which consists of representatives of all major stakeholders (i.e. relevant government staff, processors, fishers, scientists) who will advise government of actions which need to be taken to implement and be consistent with agreed policy (Task 4.1, 2014 FIP Action Plan). It is **important that the SLWG continues to operate and take forward some of the key roles and responsibilities of helping to manage the fishery** (e.g. revision of lobster Fisheries Management Plan, annual review of stock assessment results and HCRs and a review of the harvest strategy) (Tasks 1.1, 4.1.2, 2015 FIP Action Plan).
- **DMR should continue to collect reliable data** (incl. IUU catch, local landings on all major islands) and report information rapidly and accurately enough that the harvest control rule can be applied, as well as providing the longer term needs of an improved stock assessment (Tasks 1.1 and 1.2, 2015 FIP Action Plan). It remains unclear whether these responsibilities will be undertaken in conjunction with the Bahamas Agricultural and Marine Science Institute (BAMSI).
- In 2014, a revised stock assessment was developed using a new methodology to include information about the age/size structure of the population. **The results should still be considered as preliminary at this stage and further work is essential to improve and adopt the stock assessment in order to raise scores** in the fishery, including (Tasks 4.7.1, 4.7.2 and 1.1 2015 FIP Action Plan):
 - The stock assessment should be updated to 2014 and 2015 data.

- **Conduct full independent evaluation of model** (incl. alternative hypotheses and assessment approaches) and HCRs (internal only). Evidence is required, such as testing the software with simulated data, to allow such an evaluation to take place.
- **Increase size, sex and maturity sampling**, so samples are taken every month and samples are taken from a range of gear types. This should allow improved selectivity functions in the future. This should be considered as part of improved data collection and monitoring of the fishery.
- Collect data locally to improve the estimate of the linear conversion between carapace length and tail length, and to estimate tar-spotting of females by size for use as a maturity ogive.
- Consider using a length-at-age key based on the normal rather than log-normal error, to see whether this improves the fit.
- Explore the length-weight relationship to improve length-weight conversion and reduce this source of error.
- Consider linking the growth model to weight categories directly, rather than using the length-weight conversion matrix.
- All future routine biological sampling should be carried out before grading if possible. Further assessment of grades should be undertaken separately from the routine sampling.
- Experts from the fishing industry should review the interpretation of the size grading within this model to ensure that it is correct.
- Some consistent approach to develop alternate landings time series needs to be developed accounting for unrecorded historical landings.
- The Department of Marine Resources should investigate methods to capture the currently unreported legal sales of spiny lobsters by individuals.
- Continuing the program to measure the size of tails within the commercial grades.
- Develop a program to monitor the season-to-date exports to prevent overruns (DMR).
- Consider spatially-explicit data collection to refine future assessment on a bank-by-bank basis.
- **Continue and extend the education and outreach program of catching illegal lobster** to support the harvest strategy throughout the Bahamas archipelago (e.g. undersized lobster, development of voluntary log book for sustainable catch certification program etc; catch location etc) (Task 2.2.1, 2015 FIP Action Plan).

2.3 Principle 2: Ecological and Environmental Impacts

15 Performance Indicators are scored under Principle 2 related to the ecological and environmental impacts of the fishery. The 2009 pre-assessment report indicated that six PIs would score above 80 and has therefore been a relatively low priority within the FIP. The remaining nine Performance Indicators were deemed as medium priority.

The revised MSC Certification Requirements (version 2.0) has modified two Performance Indicators: Retained Species (PI2.1) and Bycatch Species (PI2.2) have been replaced with Primary Species (PI2.1) and Secondary Species (PI2.2). The revised assessment tree for Principle 2 is shown below.

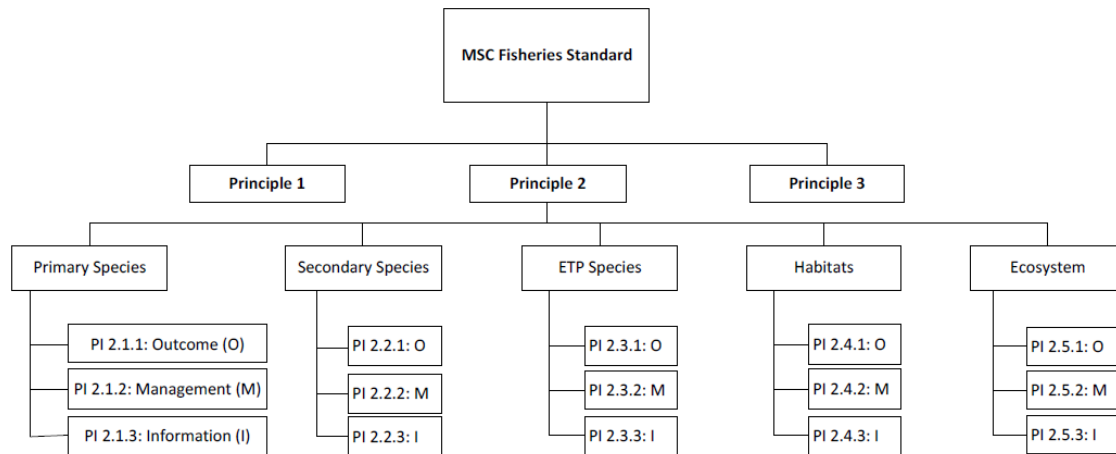


Figure 2: MSC Principal 2 default tree structure

Since 2013, there have been a limited number of ongoing activities to address issues under P2. These include research activities undertaken by Mr Gittens (DMR) to establish the effect of condominiums on lobster biology and fishery sustainability in The Bahamas. This research has three main objectives:

- Objective 1: Investigate the effect of condominiums compared to fishing traps and natural shelters on the size-specific mortality, growth, and susceptibility to disease of lobsters in nursery and non-nursery areas in The Bahamas.
- Objective 2: Evaluate condominiums as a fishing gear in terms of lobster-size selectivity and the bycatch mortality of undersized lobster and other taxa as compared to traps.
- Objective 3: Estimate the current distribution and density of condominiums in the Bahamas and, if possible, changes in those metrics over the past few decades, using remote-sensing technology.

2.3.1 Conservation status of Nassau grouper (*Epinephelus striatus*)

During the 2014 FIP review meeting, it was highlighted that although Nassau grouper (*Epinephelus striatus*) is listed as 'Endangered' under IUCN Red List, it should not be assessed under the MSC Endangered, Threatened and Protected (ETP) Performance Indicator (PI2.3) as it is not currently listed as a protected species under Bahamas national legislation, nor is it listed under Appendix 1 of the Convention on International Trade in Endangered Species (CITES). Moreover, Nassau grouper are subject to a

directed fishery, which indicates it should be assessed either as a primary or secondary species.

Given that Nassau grouper is not currently subject to management tools and measures which **intend to achieve stock management objectives in relation to reference points**, it will be assessed under Secondary Species (PI2.2).

Information on the status of Nassau grouper in Bahamas is limited and based on fisheries dependent data and interviews with fishermen. Recent studies indicate that the **status of the population may now be fully or reaching over-exploitation** although it has been acknowledged that this needs to be validated with more fishery data⁹.

Qualitative information received from stakeholders in addition to preliminary quantitative results from both 2012/13 and 2014/15 bycatch pilot studies indicate Nassau grouper is not considered to be either a 'main' species within the lobster fishery (i.e. comprises 5% or more by weight of the total catch of all species or a 'less resilient' species comprising 2% or more by weight of the total catch of all species of the UoA). All other secondary species not considered 'main' shall be considered 'minor' species (§ SA3.4.2 MSC FCR, version 2.0). Nassau grouper is therefore classified as a 'minor' secondary species for MSC assessment purposes.

Risk Based Framework assessment

At the 2015 FIP review meeting, an RBF workshop was held to better understand the expected results of several data-deficient outcome PIs, including secondary species (PI2.2.1) and ecosystem (PI2.5.1).

The outcome status of secondary species is specifically for species caught by the UoA (lobster trap). The results of the 2014/15 lobster trap study provide some quantitative information on the likely range of species to consider under the RBF. The results showed a number of species were either retained or unwanted species. According to §PF4.1.3 (MSC FCR version 2.0), a productivity susceptibility analysis (PSA) is only required for 'main' species when evaluating PI2.1.1 or PI2.1.2.

Using quantitative information obtained directly from the 2014/15 lobster trap pilot bycatch study and qualitative information from stakeholders, 'margate' fish (Haemulidae spp. – most likely black grunt, *Anisotremus surinamensis*) may be considered a 'main' species. However, given the conservation status of Nassau grouper (see above), this species was also included in the PSA although it would not be expected to be included in an MSC assessment unless the catch was known to significantly increase. The results of the PSA for margate fish were used to score PI2.2.1.

In brief, each attribute is scored between 1 (low risk) and 3 (high risk) and a weighted score calculated. Table 5 and Table 6 show the scoring tables for the productivity and susceptibility attributes, respectively. Further details of the methodology are outlined in MSC guidelines (§PF1, MSC FCR ver2.0).

⁹ Cheung W.W.L., Sadovy de Mitcheson Y., Braynen M.T., Gittens L.G. 2013. Are the last remaining Nassau grouper *Epinephelus striatus* fisheries sustainable? Status quo in the Bahamas. *Endangered Species Research* 20: 27–39. DOI: 10.3354/esr00472

Table 5 PSA productivity attributes and scores.

Productivity determinant	High productivity (Low risk, score=1)	Medium productivity (medium risk, score=2)	Low productivity (high risk, score=3)
Average age at maturity	<5 years	5-15 years	>15 years
Average maximum age	<10 years	10-25 years	>25 years
Fecundity	>20,000 eggs per year	100-20,000 eggs per year	<100 eggs per year
Average maximum size (not to be used when scoring invertebrate species)	<100 cm	100-300 cm	>300 cm
Average size at maturity (not to be used when scoring invertebrate species)	<40 cm	40-200 cm	>200 cm
Reproductive strategy	Broadcast spawner	Demersal egg layer	Live bearer
Trophic Level	<2.75	2.75-3.25	>3.25
Density dependence !! (to be used when scoring invertebrate species only)	Compensatory dynamics at low population size demonstrated or likely	No depensatory or compensatory dynamics demonstrated or likely	Depensatory dynamics at low population sizes (Allee effects) demonstrated or likely

Table 6 PSA susceptibility attributes and scores.

Susceptibility attribute	Low susceptibility (Low risk, score=1)	Medium susceptibility (medium risk, score=2)	High susceptibility (high risk, score=3)
Areal overlap (availability) Overlap of the fishing effort with a species concentration of the stock	<10% overlap	10-30% overlap	>30% overlap
Encounterability The position of the stock/species within the water column relative to the fishing gear, and the position of the stock/species within the habitat relative to the position of the gear	Low overlap with fishing gear (low encounterability)	Medium overlap with fishing gear	High overlap with fishing gear (high encounterability) Default score for target species (P1)
Selectivity of gear type Potential of the gear to retain species	a Individuals < size at maturity are rarely caught	a Individuals < size at maturity are regularly caught	a Individuals < size at maturity are frequently caught
	b Individuals < size at maturity can escape or avoid gear	b Individuals < half the size at maturity can escape or avoid gear	b Individuals < half the size at maturity are retained by gear
Post-capture mortality (PCM) The chance that, if captured, a species would be released and that it would be in a condition permitting subsequent survival	Evidence of majority released postcapture and survival	Evidence of some released postcapture and survival	Retained species or majority dead when released Default score for retained species (P1 or P2)

Based on the outcome of stakeholder consultation and information obtained from the available literature and Fishbase¹⁰, a summary of the results for black grunt (*Anisotremus surinamensis*) and Nassau grouper are shown in the following tables for productivity, susceptibility and overall PSA and MSC scores for both black grunt and Nassau grouper.

Productivity Attribute	PSA score (1-3)	
	Black grunt	Nassau grouper
Average age at maturity	1	2
Average max age	2	3
Fecundity	3	3
Average max size	1	2
Average size at Maturity	1	2
Reproductive strategy	1	1

¹⁰ <http://www.fishbase.org/>

Trophic level (fishbase)	3	3
Total Productivity	1.71	2.29

The total productivity score for black grunt (1.71) was lower than that for Nassau grouper (2.29), which shows that Nassau grouper has a lower productivity and therefore higher risk level.

Susceptibility Attribute	PSA score (1-3)	
	Black grunt	Nassau grouper
Areal overlap	1	1
Encounterability	2	2
Selectivity	2	2
Post-capture mortality	3	3
Total Susceptibility	1.28	1.28

The total susceptibility score for black grunt (1.28) was the same as that for Nassau grouper (1.28), as these species are considered to have a similar spatial range and both interacts with the same UoA.

The productivity and susceptibility score can be plotted to provide a graphical presentation of the potential vulnerability for each species (Figure 3). These scores can be used to calculate the total PSA score and converted into an MSC score.

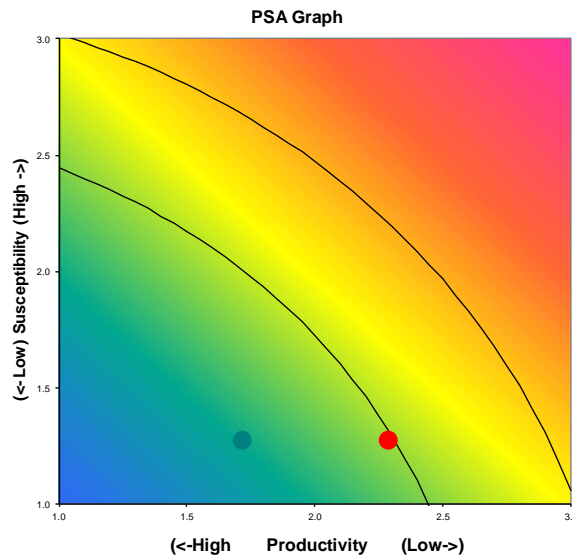


Figure 3 Results from PSA for black grunt (blue circle) and Nassau grouper (red circle).

	Black grunt	Nassau grouper
Total PSA	2.14	2.62
Total MSC score	92.6	80.2

The results show that black grunt (*Anisotremus surinamensis*) is a low risk species, with a high MSC score (92.6). In comparison, Nassau grouper (*Epinephelus striatus*) had identical susceptibility scores, but had an overall higher productivity risk score (2.29 compared to 1.71 for black grunt).

2.3.2 Primary species

Primary species are those that are caught by the lobster fishery but are not included in the UoA. Primary species are subject to management tools and measures which intend to achieve stock management objectives in relation to reference points. They are usually species of commercial value to either the UoA or fisheries outside the UoA, with management tools controlling exploitation as well as known reference points in place.

Primary species are further categorized into main and minor. Main primary species account for 5% or more of the total catch or for 'less resilient' species making 2% or more of the total catch. All other species are considered minor primary species.

PI 2.1.1 Primary species status

Based on information and data received on the lobster fishery, there are no species caught subject to management tools and measures, to achieve stock management objectives in relation to reference points. Under these circumstances, the RBF would also not be triggered (i.e. no species to assess) and the fishery would be expected to meet SG100. However, continuous information and monitoring of catches remains a key task to ensure no primary species are caught in future (see PI2.1.3).

Total PI Score: 100

The UoA aims to maintain primary species above the point where recruitment would be impaired (PRI) and does not hinder recovery of primary species if they are below the PRI.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Main primary species stock status	<p>Main primary species are likely to be above the PRI</p> <p>OR</p> <p>If the species is below the PRI, the UoA has measures in place that are expected to ensure that the UoA does not hinder recovery and rebuilding</p>	<p>Main primary species are highly likely to be above the PRI</p> <p>OR</p> <p>If the species is below the PRI, there is either evidence of recovery or a demonstrably effective strategy in place between all MSC UoAs which categorise this species as main, to ensure that they collectively do not hinder recovery and rebuilding.</p>	<p>There is a high degree of certainty that main primary species are above PRI and are fluctuating around a level consistent with MSY.</p>
b. Minor primary species stock status			<p>For minor species that are below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species</p>

PI 2.1.2 Primary species management strategy

There are no reported catches of any primary species (either 'main' or 'minor') by the UoA. As such there is no requirement at this time to develop specific management measures or a strategy for this purpose. To ensure this continues not be necessary, sufficient ongoing monitoring of the fishery should occur (see PI2.1.3).

Total PI Score: 100

There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species; and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Management strategy in place	There are measures in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to be above the PRI.	There is a partial strategy in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the PRI.	There is a strategy in place for the UoA for managing main and minor primary species.

The UoA does not catch primary species, and as such this scoring issue meets SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Management strategy evaluation	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar UoAs/species).	There is some objective basis for confidence that the measures/ partial strategy will work, based on some information directly about the UoA and/or species involved.	Testing supports high confidence that the partial strategy/ strategy will work, based on information directly about the UoA and/or species involved.

The UoA does not catch primary species, and as such this scoring issue meets SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Management strategy implementation		There is some evidence that the measures/ partial strategy is being implemented successfully .	There is clear evidence that the partial strategy/ strategy is being implemented successfully and is achieving its overall objective as set out in scoring issue a .

The UoA does not catch primary species, and as such this scoring issue meets SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
d. Shark finning (only score if the retained species is a shark)	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.

The UoA does not capture sharks, which are protected under national legislation. This scoring issue is not applicable.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
e) 2.4 Review of alternative measures	2.5 There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species.	2.6 There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	2.7 There is a biannual review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all primary species, and they are implemented, as appropriate.

The UoA does not capture any unwanted species that are considered primary species. This scoring issue is not applicable.

PI 2.1.3 Primary species information

Whilst it has been determined that no primary species are caught by the UoA, this PI must still be scored.

Total PI Score: 80

Information on the nature and amount of primary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Information adequacy for assessment of impact on main species	<p>Qualitative information is adequate to estimate the impact of the UoA on the main primary species with respect to status.</p> <p>OR</p> <p>If RBF is used to score PI 2.1.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for main primary species.</p>	<p>Some quantitative information is available and is adequate to assess the impact of the UoA on the main primary species with respect to status.</p> <p>OR</p> <p>If RBF is used to score PI 2.1.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for main primary species.</p>	<p>Quantitative information is available and is adequate to assess with a high degree of certainty the impact of the UoA on main primary species with respect to status.</p>

The RBF would not be used to score PI2.1.1 for the UoA (see above).

Informal discussions, including those between fishers and Fisheries Officers provide qualitative information about the nature of main primary species catches sufficient to meet SG60. In addition, the EU catch certificate, Marine Resource Landing Form, Monthly Purchase Report and Processing Purchase Records should be sufficient to provide 'some quantitative information' on the amount of all primary species landed caught from certain landing ports and processors within the Bahamas, but this would need to be available to demonstrate some quantitative information is available to meet SG80. A more comprehensive data collection program throughout the Bahamas is expected to meet SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Information adequacy for assessment of impact on minor species			<p>Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.</p>

There are no minor primary species caught by the UoA. However, it is unlikely that the current level of monitoring would be adequate to estimate impact of UoA on all minor species to meet SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Information adequacy for management strategy	Information is adequate to support measures to manage main primary species.	Information is adequate to support a partial strategy to manage main primary species.	Information is adequate to support a strategy to manage all primary species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.

Current monitoring procedures (e.g. EU catch certificate, Marine Resource Landing Form, Monthly Purchase Report and Processor Purchase Reports) are ongoing and considered sufficient to ensure quantitative information on the quantity of any primary species would to be collected from certain landing ports and processors within the Bahamas to meet SG80. There has been no evaluation of the data and monitoring procedures necessary to manage all primary species, and to evaluate with a high degree of certainty to meet SG100.

Risks

There is a small risk that the assessment team considers there is insufficient information to determine the there are no primary species. This could also have implications for PI 2.1.1 and 2.1.2 above.

2.7.1 Secondary Species

Secondary species are those that are neither primary species nor ETP species and include species that are 'out of scope' i.e. amphibians, birds, reptiles and mammals. These species could in some instances be landed intentionally to be used either as bait or as food or for other subsistence uses, but may also in some cases represent incidental catches that are undesired but somewhat unavoidable in the fishery. Given the often unmanaged status of these species, there are unlikely to be reference points for biomass or fishing mortality in place, as well as a general lack of data availability.

Main secondary species are those that account for 5% or more of the total catch or for 'less resilient' species account for 2% or more of the total catch. Main secondary species also include all species that are out of scope. All other secondary species are considered minor.

Based on information and data received on the lobster fishery, there are a number of species caught in the UoA (lobster trap) that are not subject to management tools and measures, to achieve stock management objectives in relation to reference points. These may also include a number of unwanted species and are all classified as secondary species. As highlighted earlier, Nassau grouper (*Epinephelus striatus*) is classified as a minor secondary species.

PI2.2.1 Secondary species status

Little or no information is known about the status of secondary species. Under these circumstances, it is expected that an RBF would be triggered to determine the status for data-deficient main species. The 2015 FIP review meeting conducted a RBF workshop to determine the expected outcome for secondary species (see above). The results show that one species (black grunt or 'marget fish') is likely to be identified as a main secondary species and the results of the RBF provided an MSC score (93) than can be used in this assessment. As such, the scoring table below is for reference only.

Total PI Score: 93 (PSA based on 'main' species)

The UoA aims to maintain secondary species above a biological based limit and does not hinder recovery of secondary species if they are below a biological based limit.

For reference only, the following table shows the scoring issues that would be assessed if the status of secondary species was available.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Main secondary species stock status	<p>Main secondary species are likely to be above biologically based limits.</p> <p>OR</p> <p>If below biologically based limits, there are measures in place expected to ensure</p>	<p>Main secondary species are highly likely to be above biologically based limits</p> <p>OR</p> <p>If below biologically based limits, there is</p>	<p>There is a high degree of certainty that main secondary species are above biologically based limits</p>

	that the UoA does not hinder recovery and rebuilding.	<p>either evidence of recovery or a demonstrably effective partial strategy in place such that the UoA does not hinder recovery and rebuilding.</p> <p>AND Where catches of a main secondary species outside of biological limits are considerable, there is either evidence of recovery or a, demonstrably effective strategy in place between those MSC UoAs that have considerable catches of the species, to ensure that they collectively do not hinder recovery and rebuilding.</p>	
b. Minor secondary species stock status			For minor species that are below biologically based limits there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species.

PI2.2.2 Secondary species management strategy

Total PI Score: 80

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.

The Management Strategy PI must be scored, even if the UoA has no impact on this component (§SA3.8.1, MSC v2.0). However, under §GSA3.5.1 (MSC guidance document, v2.0), if the UoA has no (or negligible) impact on the 'main' bycatch species, then a management strategy is not required at SG60 or SG80. However, to meet SG100, a management strategy must be in place for the UoA of P2 species, since gear loss or other incidental impacts can still occur.

Given the likely outcome from PI2.2.1, it is anticipated that the fishery has a 'negligible' impact on secondary species and will not require a partial strategy to meet SG80. In addition, unlike fish traps, it could be argued that the design of the wooden lobster traps allows for juvenile finfish and other animals to escape from the trap.

The fishery is expected to meet SG80 for all scoring issues under PI2.2.2.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Management strategy in place	There are measures in place, if necessary, which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a partial strategy in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a strategy in place for the UoA for managing main and minor secondary species.

No partial strategy is expected to be required, and the fishery is likely to meet the requirements at S80 level. While management measures are in place to regulate the trap fishery, these may not be sufficient evidence to demonstrate a management strategy exists to meet SG100 level.

b. Management strategy evaluation	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/ species).	There is some objective basis for confidence that the measures/ partial strategy will work, based on some information directly about the UoA and/or species involved.	Testing supports high confidence that the partial strategy/ strategy will work, based on information directly about the UoA and/or species involved.
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No partial strategy is expected to be required, and the fishery is likely to meet the requirements at SG80 level. Although some testing has occurred directly about the UoA (trap fishery), these pilot studies are unlikely to be considered sufficiently comprehensive

(spatial and temporal scale) to support a high level of confidence that a partial strategy will work to meet the SG100 level.

c. Management strategy implementation		There is some evidence that the measures/ partial strategy is being implemented successfully .	There is clear evidence that the partial strategy/ strategy is being implemented successfully and is achieving its overall objective as set out in scoring issue a.
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No partial strategy is expected to be required, and the fishery is likely to meet the requirements at S80 level. It is recommended however, that monitoring and enforcement should ensure all wooden lobster traps are fitted with a biodegradable panel to prevent ghost fishing if the trap is lost.

d. Shark finning	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
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No shark finning occurs within the UoA and scoring issue (d) is not applicable and is therefore not expected to be scored.

e. Review of alternative measures to minimise mortality of unwanted catch	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main secondary species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main secondary species and they are implemented as appropriate.	There is a biannual review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all secondary species, and they are implemented, as appropriate.
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To date, evidence from the lobster trap study suggests that the impact of the trap on main secondary species is negligible. The fishery is therefore likely to meet the requirements at SG80. However, this cannot be extended to all unwanted secondary species and is therefore unlikely to meet SG100 level.

PI2.2.3 Secondary Species Information

Total PI Score: 80

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.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Information adequacy for assessment of impact on main secondary species	<p>Qualitative information is adequate to estimate the impact of the UoA on the main secondary species with respect to status.</p> <p>OR</p> <p>If RBF is used to score PI 2.2.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for main secondary species.</p>	<p>Some quantitative information is available and is adequate to assess the impact of the UoA on the main secondary species with respect to status.</p> <p>OR</p> <p>If RBF is used to score PI 2.2.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species.</p>	<p>Quantitative information is available and is adequate to assess with a high degree of certainty the impact of the UoA on main secondary species with respect to status.</p>

Informal discussions, including those between fishers and Fisheries Officers provide qualitative information about the nature of main secondary species catches sufficient to meet SG60. In addition, the EU catch certificate, Marine Resource Landing Form, Monthly Purchase Report and Processing Purchase Records should be sufficient to provide ‘some quantitative information’ on the amount of all secondary species taken from certain landing ports and processors within the Bahamas, but this would need to be available to demonstrate some quantitative information is available to meet SG80. However, more comprehensive data collection program throughout the Bahamas is expected to meet SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Information adequacy for assessment of impact on minor secondary species			<p>Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.</p>

There is no quantitative information on minor secondary species sufficient to meet SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Information adequacy for management strategy	Information is adequate to support measures to manage main secondary species.	Information is adequate to support a partial strategy to manage main secondary species.	Information is adequate to support a strategy to manage all secondary species, and evaluate with a high degree of certainty whether the strategy is achieving its objective .

Current monitoring procedures (e.g. EU catch certificate, Marine Resource Landing Form, Monthly Purchase Report and Processor Purchase Reports) are ongoing and considered sufficient to ensure quantitative information on the quantity of any secondary species would to be collected from certain landing ports and processors within the Bahamas to meet SG80. There has been no evaluation of the data and monitoring procedures necessary to manage all secondary species, and to evaluate with a high degree of certainty and is not expected to meet SG100.

Risks

The risks associated with secondary species are linked to the lobster trap fishery UoA, since condominiums allow free movement of animals in and out of the gear. To date limited quantitative information exists on the level of secondary species from the lobster traps.

Similar to primary species, the assessment team shall determine and justify which secondary species are considered 'main' and which are not. For example, this can be based on the proportion of catch (e.g. >5% catch weight) or consideration of the total catch weight of secondary species, if a significantly large catch occurs in addition to the target (P1) species. It is recommended that all catch information from the trap fishery be made available for the assessment team.

2.7.2 Endangered, Threatened and Endangered (ETP) Species

ETP species are defined as: (§ SA3.1.5, MSC FCR ver.2.0)

1. Species that are recognized by national ETP legislation;
2. Species listed in the binding international agreements given below:
 - a. Appendix 1 of the Convention on International Trade in Endangered Species (CITES), unless it can be shown that the particular stock of the CITES listed species impacted by the UoA under assessment is not endangered.
 - b. Binding agreements concluded under the Convention on Migratory Species (CMS), including:
 - i. Annex 1 of the Agreement on Conservation of Albatross and Petrels (ACAP);
 - ii. Table 1 Column A of the African-Eurasian Migratory Waterbird Agreement (AEWA);
 - iii. Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS);
 - iv. Annex 1, Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS);
 - v. Wadden Sea Seals Agreement;
 - vi. Any other binding agreements that list relevant ETP species concluded under this Convention.
3. Species classified as 'out-of scope' (amphibians, reptiles, birds and mammals) that are listed in the IUCN Redlist as vulnerable (VU), endangered (EN) or critically endangered (CE).

It has been noted above that the Nassau grouper (*Epinephelus striatus*) is not listed under The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and although measures are in place to help protect spawning aggregations during winter months in the Bahamas, this vulnerable species is considered a 'minor' species under secondary species (see PI2.2.1).

A number of turtle species are listed and found under CITES Appendix 1 (green, loggerhead and hawksbill) but reports have indicated there are no interactions. It is, since 2009, prohibited to catch these turtles in the Bahamas. In addition capture of all sharks has also been banned since July 2011, and is therefore classified under ETP species.

At present, conch is listed in Appendix 2 of CITES and thus subject to export controls. As it is on Appendix 2, it is not classified as an ETP species. The directed lobster fishery using condominiums and traps does not target nor retain conch.

Other marine mammal species, such as the West Indian manatee, are known to visit the Bahamas, but there are no known interactions with the fishery. There is no known interaction with any bird species.

PI2.3.1 ETP species status

Total PI Score: 80-100

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.

Capture of all marine turtles and their eggs, and sharks has been banned in the Bahamas since September 2009¹¹ and July 2011¹² respectively. In consequence, scoring issue (a) will be required to be scored (§ SA3.10.1, MSC FCR ver.2.0).

Due to the design of the fishing gear, there is little or no interaction with ETP species and it is highly likely that the fishery will score above SG80 on all scoring issues although information showing evidence that indirect effects has been considered must be available. Good monitoring and information of the fishery must be demonstrated if SG100 scoring issues are expected to be met.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Effects of the UoA on population/ stocks within national or international limits, where applicable	Where national and/or international requirements set limits for ETP species, the effects of the UoA on the population/ stock are known and likely to be within these limits.	Where national and/or international requirements set limits for ETP species, the combined effects of the MSC UoAs on the population /stock are known and highly likely to be within these limits.	Where national and/or international requirements set limits for ETP species, there is a high degree of certainty that the combined effects of the MSC UoAs are within these limits.
Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Direct effects	Known direct effects of the UoA are likely to not hinder recovery of ETP species.	Direct effects of the UoA are highly likely to not hinder recovery of ETP species.	There is a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species.
Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Indirect effects		Indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts.	There is a high degree of confidence that there are no significant detrimental indirect effects of the UoA on ETP species.

¹¹ https://www.bahamas.gov.bs/wps/wcm/connect/753ee7b9-b615-4f17-9962-64f4f30e9cd9/MarineTurtlesOfTheBahamas.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=753ee7b9-b615-4f17-9962-64f4f30e9cd9

¹² <http://www.bahamas.gov.bs/wps/wcm/connect/240f4bc0-ccd4-4ead-a21c-23e096eefac7/Shark+Fishing+Amendment+July+2011.pdf?MOD=AJPERES>

PI2.3.2 ETP species management strategy

Unlike primary and secondary species, there are no 'main' ETP species and similarly there is no option to determine if a management strategy is 'if necessary'. Consequently, this management strategy PI must be evaluated even where no impacts were identified under PI2.3.1.

As noted above, capture of all marine turtles and their eggs, and sharks has been banned in the Bahamas. In consequence, it is expected that scoring issue (a) will be scored and (b) will not be scored (§ SA3.11.2, MSC FCR ver.2.0).

Total PI Score: 70-80

The UoA has in place precautionary management strategies designed to:

- meet national and international requirements; and
- ensure the UoA does not hinder recovery of ETP species.

Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Management strategy in place (national and international requirements)	There are measures in place that minimise the UoA-related mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a comprehensive strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to achieve above national and international requirements for the protection of ETP species.

To date, there are no perceived ETP species interactions or indirect impacts from the UoA. A number of conservation and management measures are in place to minimize the impact of the UoA on marine ETP species (e.g. minimum slot-size of wooden lobster trap, closed seasons etc.) and benthic habitat (e.g. traps must not touch living coral). Given the fishing location and gear design the conservation and management measures are expected to be highly likely to achieve national requirements to protect marine turtles and sharks. This is likely to be sufficient to meet SG60.

Given the ability to avoid interactions with ETP species, it could be argued that these form part of an ETP management strategy which through their specific design (trap slot size, escapement panel etc) are highly likely to achieve national requirements for the protection of ETP species to meet SG80. A management strategy can also include voluntary or customary arrangements agreements or practices, or codes of practice if they can be demonstrated to be working (Table GSA3; MSC FCR ver.2.0). **It will be necessary to demonstrate these issues have been fully considered to provide**

sufficient evidence to meet SG80. It is recommended that the SLWG review ETP interactions and provide evidence that these issues have been considered in full.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Management strategy in place (alternative)	There are measures in place that are expected to ensure the UoA does not hinder the recovery of ETP species.	There is a strategy in place that is expected to ensure the UoA does not hinder the recovery of ETP species.	There is a comprehensive strategy in place for managing ETP species, to ensure the UoA does not hinder the recovery of ETP species.

Scoring issue (b) is not scored as the Bahamas has national legislation to protect marine turtles and all species of shark.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Management strategy evaluation	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/ species).	There is an objective basis for confidence that the partial strategy/ strategy will work, based on information directly about the UoA and/or the species involved.	The strategy/ comprehensive strategy is mainly based on information directly about the UoA and/or species involved, and a quantitative analysis supports high confidence that the strategy will work.

Clearly the existing suite of fisheries conservation and management measures (that can be argued form part of an ETP management strategy) must be being implemented successfully sufficient to meet SG80 if no reported impacts on ETP species have occurred within the fishery.

To meet SG100, it is likely that specific evidence of gear inspections, catch records etc will be required. **It is recommended that DMR provide this information to show clear evidence that there has been no ETP interactions and the existing conservation and management measures are effective.**

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
d. Management strategy implementation		There is evidence that the strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully and is achieving its objective as set out in scoring issue a. or b.

There is evidence available from fisheries inspections and records on the number of infringements that the conservation and management measures put in place within the

fishery are being implemented successfully and are expected to meet the requirements at SG80.

There is a lack of clear evidence that the conservation and management measures that make up an ETP strategy meet specific objectives to reach the SG100 level. **It is recommended that the measures in place to protect ETP are reviewed by the SLWG in conjunction with information on level of compliance with statutory control measures and a strategy document developed, if appropriate.**

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
e. Review of alternative measures to minimise mortality of ETP species	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.	There is a biannual review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.

Given the risk of ETP species interaction with the fishery is considered minimal or non-existent, the level of increased risk can only occur if the gear type is changed or modified in future. As such, it can be argued that there is no requirement to regularly review the potential effectiveness of alternative measures, when the existing measures have already been shown to be effective.

There is a small risk that the assessment team might want to see evidence that current gear types do not change over time such that ETP species would then become vulnerable. **It is recommended that the SLWG address this potential concern by reviewing the current suite of conservation and management measures and determining whether they remain effective at minimizing the UoA-related mortality of ETP species (e.g. demonstrate all traps are fitted with escape panel etc).**

PI2.3.3 ETP species information

Total PI Score: 75 – 80

Relevant information is collected to support the management of UoA 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

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Information adequacy for assessment of impacts	<p>Qualitative information is adequate to estimate the UoA related mortality on ETP species.</p> <p>OR</p> <p>If RBF is used to score PI 2.3.1 for the UoA Qualitative information is adequate to estimate productivity and susceptibility attributes for ETP species.</p>	<p>Some quantitative information is adequate to assess the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species.</p> <p>OR</p> <p>If RBF is used to score PI 2.3.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for ETP species.</p>	<p>Quantitative information is available to assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of ETP species.</p>

This PI is most relevant to the lobster trap UoA. The level of qualitative and quantitative information collected through DMR landing forms and new EU catch certificate program, in addition to the processor catch reports are expected to meet SG80. In addition to regular monitoring of the fishery, the trap bycatch study conducted during 2012/13 and 2014/15 provides some quantitative evidence that the fishery is highly unlikely to interact with ETP species.

The assessment team may likely require samples of completed forms to demonstrate how the information is collected and stored for monitoring purposes to meet SG80. It is recommended that these are prepared in advance of the assessment.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Information adequacy for management strategy	Information is adequate to support measures to manage the impacts on ETP species	Information is adequate to measure trends and support a strategy to manage impacts on ETP species	Information is adequate to support a comprehensive strategy 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.

Qualitative information obtained from stakeholders and some quantitative information obtained from the lobster bycatch studies is expected to be sufficient to demonstrate the measures are adequate to manage the impacts on ETP species at both SG60 and SG80. **However, it is recommended that sufficient evidence is made available to demonstrate that the turtle and shark ban are actually working.**

Given there is no comprehensive ETP strategy at this time, the fishery is unlikely to meet SG100.

2.7.3 Habitats

Limited information and data currently exist on the impacts and trends of the fishery on the status of the habitat. Both condominiums (casitas) and lobster traps have the potential to impact the habitat in different ways. A literature review was conducted in 2012 to gain a better understanding of the likely impacts of the fishery on habitat status.

The revised MSC FCR (version 2.0) now includes vulnerable marine ecosystems (VMEs) in the assessment as defined within §GSA3.13.3.2:

VMEs have one or more of the following characteristic, as defined in paragraph 42 of the FAO Guidelines:

- *Uniqueness or rarity – an area or ecosystem that is unique or that contains rare species whose loss could not be compensated for by similar areas or ecosystems*
- *Functional significance of the habitat – discrete areas or habitats that are necessary for survival, function, spawning/reproduction, or recovery of fish stocks; for particular life-history stages (e.g., nursery grounds, rearing areas); or for ETP species*
- *Fragility – an ecosystem that is highly susceptible to degradation by anthropogenic activities*
- *Life-history traits of component species that make recovery difficult – ecosystems that are characterised by populations or assemblages of species that are slow growing, are slow maturing, have low or unpredictable recruitment, and/or are long lived*
- *Structural complexity – an ecosystem that is characterised by complex physical structures created by significant concentrations of biotic and abiotic features*

The FAO Guidelines' Annex identifies the following species groups, communities, and habitat-forming species that may form VMEs and may be indicative of the occurrence of VMEs:

- *Certain coldwater corals and hydroids (e.g., reef builders and coral forest, such as stony corals, alcyonaceans, gorgonians, black corals, and hydrocorals)*
- *Some types of sponge-dominated communities*
- *Communities composed of dense emergent fauna where large sessile protozoans and invertebrates (e.g., hydroids and bryozoans) form an important structural component of habitat*
- *Seep and vent communities comprised of invertebrate and microbial species found nowhere else (i.e., endemic)*

It is noted that the MSC's intent is that, even though the FAO Guidelines were written for deep-sea fisheries, the Guidelines' VME characteristics also apply to non-deep-sea fisheries. Further, when the FAO Guidelines are applied in shallow, inshore waters, the definition of VME could include other species groups and communities (e.g., seagrass beds, complex kelp-dominated habitats, biogenic reefs).

Under these definitions it is anticipated there are three main VMEs identified within the Bahamas that the fishery might interact with:

- Coral reefs
- Seagrass beds, and
- Mangrove forests

As part of ongoing research Mr. Lester Gittens (DMR) presented a further update of his PhD studies on the impact of condominiums on lobster biology and fishery sustainability. A specific objective of his study includes an estimate of the current distribution and density of condominiums in the Bahamas and, if possible, changes in those metrics over the past few decades, using remote-sensing technology to help determine the likely impact of the gear on habitats.

In addition to remote sensing, the existing lobster trap bycatch study has contributed a further understanding of the likely impacts of the gear, both on the habitat and on the ecosystem. It has previously been noted that approximately 43 000 traps were licensed during the 2012-13 fishing season (Gittens, pers. comm.). It would be helpful to update this to monitor trends in this UoA.

Conservation measures and regulations are in place to protect coral, including restrictions on boat anchorage and using poisons or other chemicals without permission that may otherwise damage the habitat and living marine resources. As such, condominiums and lobster traps are not placed directly on the reef, which is thought to help minimize habitat impacts.

Both traps and condominiums are placed of soft substrates, which include seagrass beds. Information from stakeholders indicates that lobster traps are temporary structures and as such do not impact seagrass areas. In contrast, condominiums are considered to be semi-permanent structures that can create an artificial habitat and could have an impact on seagrass beds (observed 'halo' effect around gear). Stakeholder consultation and information from the literature suggest that these impacts are reversible.

PI2.4.1 Status

Total PI Score: 80

The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function.
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Due to the current lack of detailed information on the impact of the fishery on the habitat structure and function, this Outcome PI is likely to be assessed using the RBF. Stakeholder information from previous FIP workshops has indicated that the Bahamas lobster fishery using condominiums and/or lobster traps does not have a significant impact on the habitat structure and function to a point where there would be serious or irreversible harm. However, due to sheer number and distribution of condominiums used in the fishery caution is given to the likely outcome of the RBF. Furthermore, the sheet metal and wooden poles used in their construction may also have unforeseen impacts on the status of the habitat, although these are expected to be less than other materials such as concrete used in other parts of the Caribbean (e.g. Mexico).

The fishery is expected to meet SG80 through the RBF using the consequence spatial analysis (CSA) technique under MSC FCR version 2.0. Due to the complexity of this analysis and time limitations this activity was not undertaken during the 2015 FIP review meeting.

For reference, the following table shows the scoring issues that would be assessed if the status of habitats was available.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Commonly encountered habitat status	The UoA is unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	The UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	There is evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
b. VME habitat status	The UoA is unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is evidence that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
c. Minor habitat status			There is evidence that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where there would be serious or irreversible harm.

Risks

Due to the large number and distribution of condominiums used in the fishery caution is given to the likely outcome of the RBF. Furthermore, the sheet metal and wooden poles used in their construction may also have unforeseen impacts on the status of the habitat.

PI 2.4.2 Management Strategy

Total PI Score: 65-80

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.

The UoA is deemed unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm (PI 2.4.1). Under these circumstances, the full assessment will determine if a management strategy 'is necessary' at either the SG60 or SG80 level (§GSA3.14, MSC Guidance for FCR v2.0).

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Management strategy in place	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.

Given the expected outcome of habitat status, it is unlikely that the fishery will require a partial strategy and therefore is expected to meet both SG60 and SG80. It has been noted that conservation measures and regulations are in place to protect hard coral reefs, which forms a strategy to manage the impact. As such, condominiums and lobster traps are not permitted to be placed directly on the coral reef. Furthermore, stakeholder consultation indicates that lobster traps are more likely to attract finfish (a less valuable resource), if placed too close to coral outcrops and subsequently do not attract lobster. Specific avoidance behaviour by lobster fishermen may be considered a strategy.

Seagrass beds are managed indirectly through a network of national marine protected areas throughout the Bahamas¹³. This network forms a strategy to minimise impacts on both habitat and the wider ecosystem for all potential impacts, including non-MSC related fisheries. The protection offered to both coral and seagrass beds may be expected to meet the SG100. There is currently no control over the number of condominiums or traps used in the fishery and as such the fishery may be penalized for this lack of monitoring and control. This will likely prevent the fishery from meeting SG100.

If a management strategy is deemed necessary (through result of Outcome PI), there is a small risk that the regulations and levels of protection offered might not be considered a strategy or partial strategy, but a suite of measures. It will be important to identify clearly what might make it a partial strategy. It is recommended that specific reference to a number of management measures to help protect habitat are highlighted within the FMP or similar document.

¹³ Various sources of information available - see Master Plan for Bahamas National Protected Area System: <https://www.cbd.int/doc/meetings/ecr/cbwecr-2014-03/other/cbwecr-2014-03-day2-07-en.pdf>

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Management strategy evaluation	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/ habitats).	There is some objective basis for confidence that the measures/ partial strategy will work, based on information directly about the UoA and/or habitats involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or habitats involved.

It is anticipated that the fishery will not require a partial strategy and therefore meet SG80. However, if the fishery cannot demonstrate some objective basis for confidence that it is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm (PI 2.4.1), a partial strategy will be required. Under these circumstances the fishery may not meet SG80 and a condition may be placed to demonstrate there is some objective basis for confidence that the partial strategy will work based on based on some information directly about the fishery and/or habitats involved. Information based on monitoring inside/outside marine protected areas and/or the recovery rate of habitats to potential UoA impacts would provide objective basis for confidence that the measures would work.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Management strategy implementation		There is some quantitative evidence that the measures/ partial strategy is being implemented successfully.	There is clear quantitative evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a).

It is anticipated that the fishery will not require a partial strategy and therefore meet SG80.

Similar to the previous scoring issue, if the fishery cannot demonstrate that it is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm (PI 2.4.1), a partial strategy will be required. Under these circumstances the fishery may not meet SG80 and a condition may be placed on the fishery to collect more information to provide evidence to show that the strategy is being implemented successfully.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
d. Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to	There is qualitative evidence that the UoA complies with its management requirements to protect VMEs.	There is some quantitative evidence that the UoA complies with both its management requirements and with protection measures	There is clear quantitative evidence that the UoA complies with both its management requirements and with protection measures

protect VMEs		afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
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As defined under §SA3.14.3 (MSC FCR v2.0), the assessment team will only score scoring issue (d) if the UoA impacts a VME and/or if another MSC UoA or non-MSC fishery, where relevant, impacts a VME within the UoAs 'managed area'.

It is known that the fishery has the potential to interact with both coral and seagrass beds, but is unlikely to negatively impact them sufficient to warrant scoring of scoring issue (d), otherwise specific management requirements would have been put in place, similar to those to protect coral reefs. It is therefore expected that this scoring issue is not applicable under this assessment.

Risk

If the fishery cannot demonstrate that it is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm (PI 2.4.1), then additional evidence would be required to show that the partial strategy is being implemented successfully.

There is a risk, therefore, that the fishery would not meet SG80 and a condition would be placed to demonstrate the partial strategy will work and is implemented successfully.

PI2.4.3 Information / Monitoring

Total PI Score: 65-80

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.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Information quality	<p>The types and distribution of the main habitats are broadly understood.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA: Qualitative information is adequate to estimate the types and distribution of the main habitats.</p>	<p>The nature, distribution and vulnerability of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA: Some quantitative information is available and is adequate to estimate the types and distribution of the main habitats.</p>	<p>The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.</p>

Environmental habitat maps are available for the Bahamas sufficient to understand the nature, distribution and vulnerability of all main habitat types at a level of detail relevant to the scale and intensity of the fishery. A lack of evidence to demonstrate a comprehensive understanding of all habitat types may prevent the fishery from meeting SG100.

It is highly recommended that this information is made available in advance of the assessment.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Information adequacy for assessment of impacts	<p>Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.</p>	<p>Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.</p>	<p>The physical impacts of the gear on all habitats have been quantified fully.</p>

	<p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA: Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.</p>	<p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA: Some quantitative information is available and is adequate to estimate the consequence and spatial attributes of the main habitats.</p>	
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It is likely that the fishery will not trigger the use of CSA under PI2.4.1 above. It is unclear whether sufficient data are available to allow the spatial extent of the interaction between the main habitat types and the location of the fishery to be fully determined to meet SG80. The considerable number and large spatial distribution of condominiums and lobster traps remain largely unrecorded. Furthermore, the physical impacts of the gear on all habitats have not been quantified fully, and are unlikely to meet the requirements at SG100.

An understanding of the number and distribution of condominiums is part of ongoing research and is expected to help address this scoring issue. However, until such results are available for analysis this lack of information may prevent the fishery from meeting SG80 using the default assessment tree (table above).

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Monitoring		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in all habitat distributions over time are measured.

Data capture forms do not currently have any information on the number or location of gear deployed in the fishery. Since this information is not currently being collected on a regular basis, given the scale of the fishery, it is not expected to meet SG80 and a condition may be given to ensure there is an ongoing monitoring program in place.

Recommendation

Qualitative information and some quantitative information on the distribution of lobster traps was obtained during the 2015 FIP review meeting and RBF workshop. While some quantitative information is available on the number of reported licensed traps in use, no information is available on their spatial distribution.

It is highly recommended to consider introducing fisheries statistical areas to better understand where fishing effort exists that would also help determine whether there is any risk of local depletion within the fishery and support future bank-by-bank monitoring and assessment of the population (P1).

It has previously been noted that the current habitat assessment is heavily dependent on Mr. Gittens' current research. It is further recommended commissioning him to provide a short summary of his findings, conclusions and recommendations so far to support the full assessment before the site visit takes place.

2.7.4 Ecosystem

PI2.5.1 Status

Total PI Score: 80

The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function.

Limited information and data exist on the impacts and trends of the fishery on the status of the ecosystem. Both condominiums and lobster traps have the potential to impact the ecosystem in different ways. Similar to habitat outcome PI, a literature review was conducted in 2012 to gain a better understanding of the likely impacts of the fishery on ecosystem status. This resulted in limited information about the potential impact of the gear in the Bahamas due to the unknown scale and intensity of the fishery at this time.

Similar to the 2014 FIP review meeting, Mr. Gittens from DMR provided a brief update of his research with part of his objectives to:

- i. Investigate the effect of condominiums compared to fishing traps and natural shelters on the size-specific mortality, growth, and susceptibility to disease of lobsters in nursery and non-nursery areas in The Bahamas, and
- ii. Evaluate condominiums as a fishing gear in terms of lobster-size selectivity and the bycatch mortality of undersized lobster and other taxa as compared to traps.

The published results of Mr. Gittens' research are not yet available and it is therefore expected that due to the limited information on the impact of the fishery on the ecosystem structure and function within the Bahamas, the fishery may trigger use of the RBF, which uses the Scale, Intensity and Consequence Analysis (SICA) method.

Based on stakeholder consultation during previous FIP workshops, the lobster fishery is not expected to retain other main non-target species (with exception perhaps to Nassau grouper), discarded bycatch or ETP species. As such, the potential impact of the fishery on the trophic structure and function is likely to come directly from changes in the abundance of lobster and impact of the gear on benthic habitats. Given the results from outcome PI for lobster stock status and habitat, the fishery would be expected to meet SG80 either under the RBF methodology or if there is sufficient information accumulated, under normal scoring. Given some of the outstanding uncertainties in the data, it is unlikely that the fishery will meet SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Ecosystem status	The UoA is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The UoA 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.	There is evidence that the UoA 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.

PI2.5.2 Management Strategy

Total PI Score: 80

There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function.

Since the removal of lobster is deemed the highest impact on the ecosystem, the results from the stock assessment indicate this impact to be minimal (not overfished). The lobster fishery is therefore unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be serious or irreversible harm (PI 2.5.1). Under these circumstances, a management strategy would not be deemed necessary at either the SG60 or SG80 level (paragraph CB3.3.2, MSC CR v1.3). It is therefore envisaged that the fishery would meet SG80. The following scoring issues are presented for reference purposes only.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Management strategy in place	There are measures in place, if necessary.	There is a partial strategy in place, if necessary.	There is a strategy that consists of a plan , in place.
Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Management strategy in place	There are measures in place, if necessary which take into account the potential impacts of the UoA on key elements of the ecosystem.	There is a partial strategy in place, if necessary, which takes into account available information and is expected to restrain impacts of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a strategy that consists of a plan , in place which contains measures to address all main impacts of the UoA on the ecosystem, and at least some of these measures are in place.
Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Management strategy design	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar UoAs/ ecosystems).	There is some objective basis for confidence that the measures/ partial strategy will work, based on some information directly about the UoA and/or the ecosystem involved	Testing supports high confidence that the partial strategy/ strategy will work, based on information directly about the UoA and/or ecosystem involved
Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Management strategy evaluation		There is some evidence that the measures/partial strategy is being implemented	There is clear evidence that the partial strategy/strategy is being implemented successfully and is

		successfully.	achieving its objective as set out in scoring issue a.
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Risk

If the outcome of the RBF under PI 2.5.1 cannot demonstrate the fishery is highly unlikely to reduce ecosystem structure and function to a point where there would be serious or irreversible harm, it will be necessary to demonstrate that the existing conservation and management measures are sufficient to form a partial strategy under PI 2.5.2. Without a specific ecosystem management plan, which has been tested with clear evidence that it is being implemented successfully, the fishery is unlikely to meet SG100.

There is a small risk, therefore, that the fishery would not meet SG80 and a condition be placed to develop a partial strategy for ecosystem impacts.

PI2.5.3 Information / Monitoring

Total PI Score: 80-85

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

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Information quality	Information is adequate to identify the key elements of the ecosystem	Information is adequate to broadly understand the key elements of the ecosystem.	

A broad understanding of the key elements of the ecosystem is available from environmental studies and relevant literature of similar ecosystem structure and function. A literature review of ecosystem impacts was conducted as part of the FIP Action Plan and has helped to inform the likely outcome of the fishery. It is therefore expected to meet SG80. In addition, several studies have developed Ecopath models for similar ecosystems within the Caribbean, which include the Bahamas¹⁴. It is recommended that this information is made available prior to the assessment.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Investigation of UoA impacts	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but have not been investigated in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and some have been investigated in detail .	Main interactions between the UoA and these ecosystem elements can be inferred from existing information, and have been investigated in detail .

The main impacts of the UoA are either known (via stock assessment) or can be inferred from the scientific literature. The direct impacts of the gear have been addressed elsewhere under P2 Information and Monitoring, including the current research on the ecosystem impacts of the lobster fishery, as such this scoring issue is likely to meet SG80. Depending on the results of the research findings, the main interaction may also have been investigated in sufficient detail to meet SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Understanding of component functions		The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are known .	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the

¹⁴ <http://etudescaribeennes.revues.org/4529#tocto1n2>

			ecosystem are understood .
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To date, the main functions of the components in the ecosystem are known and no other main retained, bycatch or ETP species are thought to occur in the fishery based on information from stakeholders. Under these circumstances, this scoring issue is likely to meet SG80. The results of the 2014/15 lobster trap bycatch study also help support this conclusion.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
d. Information relevance		Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components and elements to allow the main consequences for the ecosystem to be inferred.

Again it could be argued that the main consequences are concerned with the removal of the target species where sufficient information is deemed available on the impacts of the UoA (i.e. that is the stock is not overexploited and therefore impact of the UoA on the ecosystem is minimal). This scoring issue is therefore expected to meet SG80. This conclusion is also supported by the results of the 2014/15 lobster trap bycatch study.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
e. Monitoring		Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.

Data capture forms do not currently have any information on the number or location of gear deployed in the fishery. The considerable number and large spatial distribution of condominiums and lobster traps largely remain unrecorded. Similarly, it has been recommended to collect additional information on the lobster trap fishery to monitor the impacts of the fishery on retained and bycatch species. Since these issues have already been addressed elsewhere, they will not be considered here under PI 2.5.3. Information on other components continues to be collected on a routine basis which is likely to meet the SG80 level.

Risks

It has been acknowledged that a continuous monitoring program is required to monitor the potential risk to benthic habitat from fishing activities (i.e., condominiums and traps). In addition to the potential impact of both gears on habitat, there is a risk over the broader impacts of condominiums on the ecosystem. This includes for example, the threat of increasing the incidence of viral infections, impeding natural migration patterns of adults into deeper water, impact of lost and/or damaged gear in addition to the previous habitat issues. Current research is looking to address these gaps in knowledge.

There is a risk that the assessment team would require a continuous fishery-specific monitoring program, given the scale and intensity of the fishery sufficient to detect an

increase in risk specific to the ecosystem, including bycatch, the benthic habitat and lobster population to be in place, although it could be argued that this will be determined following a review of the various FIP tasks. The level of monitoring already conducted by NGOs and others would likely detect major effects.

2.7.5 Summary of progress under P2

The following table provides an overview of the range of likely scores given to each PI under P2. On average the fishery is likely to pass P2 (score 80 or above), and efforts should now focus on PI 2.3.2 ETP management strategy; PI 2.3.3 ETP information; PI 2.4.2 Habitat management strategy; PI 2.4.3 Habitat information.

Performance Indicator		Likely score
2.1.1	Primary species status	100
2.1.2	Primary species management strategy	100
2.1.3	Primary species information	80
2.2.1	Secondary species status (RBF)	93
2.2.2	Secondary species management strategy	80
2.2.3	Secondary species information	80
2.3.1	ETP species status	80 – 100
2.3.2	ETP species management strategy	70 – 80
2.3.3	ETP species information/	75 – 80
2.4.1	Habitat status	80
2.4.2	Habitat management strategy	65 – 80
2.4.3	Habitat information	65 – 80
2.5.1	Ecosystem status	80
2.5.2	Ecosystem management strategy	80
2.5.3	Ecosystem information/	80-85
Total		80.5 – 85.2

2.7.6 Possible Conditions under Principle 2

There are currently four conditions that might be placed on the fishery at the current time. These are described in more detail below.

ETP Species

PI 2.3.2 management strategy

- (a) There is a **strategy** in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be **highly likely to achieve** national and international requirements for the protection of ETP species.

It will be necessary to demonstrate a number of management measures that are deemed to form part of a strategy have been fully considered to provide sufficient evidence to meet SG80. It is recommended that the SLWG review ETP interactions and provide evidence that these issues have been considered in full (Task 4.1.3, 2015 FIP Action Plan).

- (d) There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate

There is a small risk that the assessment team might want to see evidence that current gear types do not change over time such that ETP species would then become vulnerable. It is recommended that the SLWG address this potential concern by reviewing the current suite of conservation and management measures and determining whether they remain effective at minimizing the UoA-related mortality of ETP species (e.g. demonstrate all traps are fitted with escape panel etc) (Task 1.4.1, 2015 FIP Action Plan).

PI 2.3.3 Information and Monitoring

- (b) Information is adequate to measure trends and support a **strategy** to manage impacts on ETP species.

Qualitative information obtained from stakeholders and some quantitative information already obtained from the pilot lobster bycatch studies is likely to be sufficient to demonstrate the measures are adequate to manage the impacts on ETP species at both SG60 and SG80. However, it is recommended that sufficient evidence is available to demonstrate that the turtle and shark bans are actually working (Task 1.4.3, 2015 FIP Action Plan).

Habitat

PI 2.4.2 Management Strategy

- (b) There is some **objective basis for confidence** that the measures/ partial strategy will work, based on **information directly about the UoA and/or habitats** involved.

It is anticipated that the fishery will not require a partial strategy and therefore meet SG80. However, if the fishery cannot demonstrate some objective basis for confidence that it is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm (PI 2.4.1), a partial strategy will be required. Under these circumstances the fishery may not be expected to meet SG80 and a condition may be placed to demonstrate there is some objective basis

for confidence that the partial strategy will work based on based on some information directly about the fishery and/or habitats involved (Task 1.5.4, 2015 FIP Action Plan).

- (c) There is **some quantitative evidence** that the measures/ partial strategy is being implemented successfully.

It is anticipated that the fishery will not require a partial strategy and therefore meet SG80. Similar to the previous scoring issue above, if the fishery cannot demonstrate that it is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm (PI 2.4.1), a partial strategy will be required. Under these circumstances the fishery is unlikely to meet SG80 and a condition may be placed on the fishery to collect more information to provide evidence to show that the strategy is being implemented successfully (Task 1.5.4, 2015 FIP Action Plan).

PI 2.4.3 Information/Monitoring

- (a) Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.

OR

If CSA is used to score PI 2.4.1 for the UoA:

Some quantitative information is available and is adequate to estimate the consequence and spatial attributes of the main habitats.

It is unclear whether sufficient data are available to allow the spatial extent of the interaction between the main habitat types and the location of the fishery to be fully determined to meet SG80. The considerable number and large spatial distribution of condominiums and lobster traps remain largely unrecorded.

Data capture forms do not currently have any information on the number or location of gear deployed in the fishery. Since this information is not currently being collected on a regular basis, given the scale of the fishery, it is not expected to meet SG80 and a condition might be given to ensure this an ongoing monitoring program is in place. Specific details of the monitoring program can be determined following the results of the ecosystem research study (Tasks 1.2.3, 1.5.3, 2015 FIP Action Plan).

2.7.7 Recommendations under Principle 2

- It is recommended that further education and outreach programs be developed throughout the Bahamas archipelago to explain the importance of the EU catch certificate program which includes information on other retained species (Task 2.3; 2015 FIP Action Plan). This may be conducted at the same time as other education and outreach programs to improve the quality of lobster and reduce the number of undersized lobster, for example (Task 2.2, 2015 FIP Action Plan). If these can be accomplished, the level of risk for all PIs for retained species may be considered as low priority and would score an unconditional pass in an MSC assessment.
- It is highly recommended that information sources on the status of turtle and shark species in the Bahamas is made available for the assessment team. It is intended that this will help demonstrate the status of turtle and shark species is known and that the lobster fishery has no impact on the population (Task 4.1.3, 2015 FIP Action Plan).
- It is recommended that Mr. Gittens be commissioned to provide a short summary of his findings, conclusions and recommendations so far in his research to support the full assessment before the site visit takes place (Task 1.5.5, 2015 FIP Action Plan).
- It will be useful to identify all ecosystem related monitoring within the Bahamas (e.g. reef fish counts, coral-bleaching studies, seagrass monitoring etc.) for the full assessment (Task 1.5.4, 2015 FIP Action Plan).
- In addition, consideration should be given to include additional information on the existing data capture forms to include the number of gear used and broad fishing location (i.e. fisheries statistical grid reference) (Task 1.1.2, 2015 FIP Action Plan).
- While a literature review was conducted in 2012 of the impacts of similarly designed gear on the ecosystem in other regions, the results were informative but not deemed wholly relevant due to the potential scale of condominiums used in the Bahamas compared to elsewhere (previous Task 4.6, 2012 FIP Action Plan). It is highly recommended to support ongoing research by Mr. Gittens to help determine the likely impact of condominiums on the ecosystem, which includes a preliminary understanding of their aggregating and/or their role in increasing lobster productivity (Task 1.5, FIP Action Plan).

2.8 Principle 3: Management and Governance

Six Performance Indicators are now scored under Principle 3 related to the management and governance of the fishery. The 2009 pre-assessment report indicated that one Performance Indicator would score below 60 and was therefore a high priority within the FIP (PI 3.2.5 Management and Performance Evaluation). The remaining Performance Indicators were deemed as medium priority but would overall cause the fishery to fail.

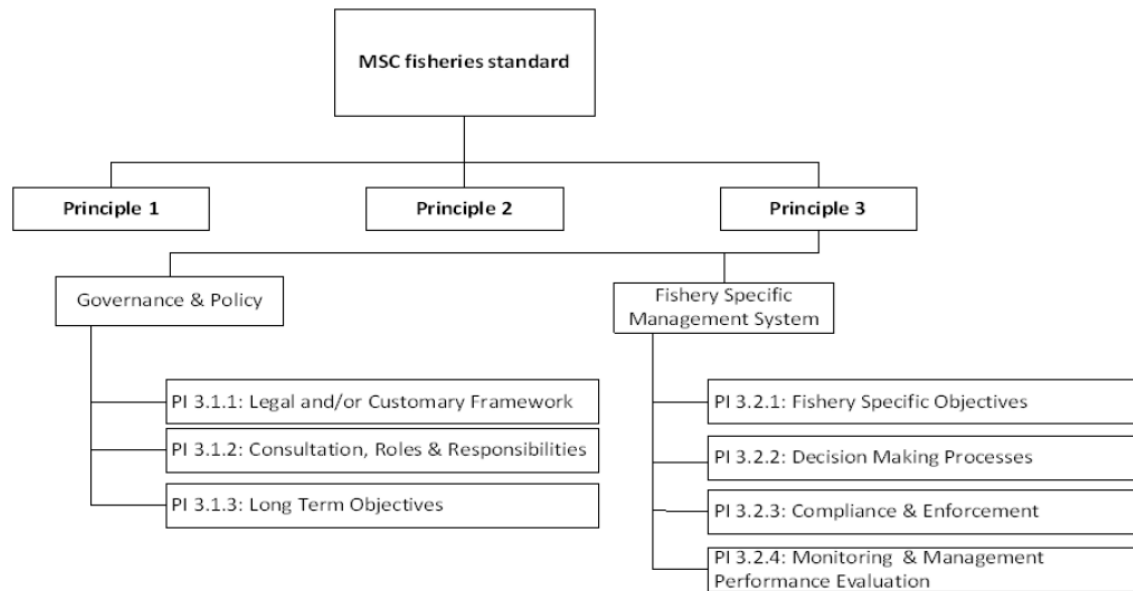


Figure 4: MSC Principal 3 default tree structure (MSC FCR ver2.0)

Implementation of the FIP Action Plan was initially focused around P1 scoring issues, as development of the stock assessment, an understanding of the stock status and development of harvest control rules and tools was paramount to the overall success of the fishery meeting the MSC Standard. Since 2012, greater focus has been given to both P2 and P3 performance indicators.

It should be noted here that the MSC RBF cannot be used for any Performance Indicator within P3, since these do not include Outcome PIs (cf. Table 3).

Principle 3 aims to address a range of management and governance issues, and therefore stakeholder participation from institutions other than DMR in developing and implementing FIP projects has been limited. Since late 2012, the SLWG has been inaugurated and the group has undertaken a series of meetings to review and confirm the HCRs, in addition to revising the lobster fisheries management plan. A summary of the priority activities undertaken thus far are outlined in the table below (Mia Isaacs, personal communication, 2015).

Date	Theme	Activities
October 2013	Spiny lobster harvest control rule	Discussed, agreed and recommended to government
		Government adopted April 2015
February 2013	Review and refine Bahamas Lobster Fisheries Management Plan	Refine management objectives
		Review and refine action plan
		Work in progress
August 2014	Lobster bycatch study	2014/15 lobster season action plan
January 2015	Tabled reports	Management performance review of the Bahamas lobster fishery 2014
		Bahamas lobster fishery harvest strategy 2014
		Summary of meeting minutes
May 2015	Presentation to DMR	Both reports for DMR approval
		Meeting minutes summaries added to DMR website

Since 2013, the FIP working group has focused much of their attention on getting the Bahamas government to formally accept the HCRs. Earlier in 2015 the HCRs were formally approved by the government of the Bahamas, and will now be used to manage the lobster fishery in the Bahamas.

Further efforts have been made to ensure the government of the Dominican Republic adheres to their agreement to reduce and illuminate IUU fishing within Bahamian waters. Whilst inter-governmental cooperation remains ongoing, Mr Braynen, Director of DMR, provided a further update at the 2015 FIP review meeting on the status of several platforms recently purchased by the Royal Bahamas Defense Force (RBDF), which includes:

- 4 Stan Patrol 4201 vessels [138 feet long with an eight feet draft]
- 4 Stan Patrol 3007 vessels [98 feet long with a 6.5 feet draft]
- 9 Rigid Inflatable Boats
- 1 RO/RO landing craft [183 feet long, with a 25 tonne crane]

These platforms will also be available for fisheries MCS and are expected to significantly reduce the threat of IUU fishing within the Bahamas EEZ. In addition to the new vessels, the RBDF will also receive new shore facilities and training.

During the 2015 FIP review meeting, an IUU risk assessment was conducted on the Bahamas fisheries sector (including lobster) to determine where the greatest IUU threats arise. This is in support of PI3.2.3 'Compliance and Enforcement'. Further details are given below. This information has been used to determine the likely status of the fishery and the level of readiness for entering an MSC full assessment. Further details are given in section below.

2.8.1 Governance and Policy

PI3.1.1 Legal and/or Customary Framework

Total PI Score: 80 – 85

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.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Compatibility of laws or standards with effective management	There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and binding procedures governing cooperation with other parties which delivers management outcomes consistent with MSC Principles 1 and 2.

The current management system is likely to meet SG80. It should be noted that the results 2013 ACP FISH II study indicate that while ‘many of the components of the fishing industry perform well, it is recognised that the sustainable and efficient development of the industry in years to come requires more robust and more comprehensive fisheries legislation’. Furthermore, the study recognized that the existing draft Act could bring improvements to the management of the fisheries sector if it can be passed into law. The study provided a number of recommendations to improve management of the fishery in the future, which are outlined in section 2.4.5 below.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Resolution of disputes	The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.	The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the UoA.	The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective .

The current management system has a mechanism (albeit not subject to law) for the resolution of legal disputes sufficient to meet SG60, and may be able to demonstrate through case studies that the system is considered to be effective to meet SG80 (e.g. Nassau grouper management etc). Depending on the level of information available to provide evidence, this may also be sufficient to meet SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Respect for rights	The management system has a mechanism to generally respect 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.	The management system has a mechanism to observe 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.	The management system has a mechanism to formally commit 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.

Current fisheries policy outlined within the Fisheries Act (Chapter 244) describes exploitation of marine resources and reserving the 100% of the fishing rights within Bahamian waters to local people. The fishery is expected to meet at least SG80. Given that this not a formal right specifically for local fishermen (as opposed to any Bahamian), this is not expected to meet SG100.

PI3.1.2 Consultation, Roles and Responsibilities

Total PI Score: 80

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.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Roles and responsibilities	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood .	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.

A multi-agency approach is used to manage the fisheries sector (e.g. DMP, Defence Force, Police Force etc), and organizations and individuals involved in the process have been identified together with their functions, roles and responsibilities. Furthermore, the management system includes a consultation process through an officially recognized Fisheries Advisory Committee and more recently the Spiny Lobster Working Group. The fishery is expected to meet SG80.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Consultation processes	The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used .

In addition to the Fisheries Advisory Committee (FAC), the formation of the SLWG allows a government-approved consultation process that is designed to meet on a regular basis. Under the existing FAC the fishery is expected to meet SG80.

There is a risk that the consultation process of the SLWG has not been sufficiently demonstrated and it will be required to collect this type of information to meet SG80. It is

recommended that the SLWG provide information on a dedicated website and are encouraged to publish minutes of each meeting (or at minimum a summary of outcomes) and identify procedures to deal with sensitive issues (e.g. remove confidential information before public version available). The website could also provide a contact and an opportunity to provide feedback.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Participation		The consultation process provides opportunity for all interested and affected parties to be involved.	The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.

Until recently, it was not clear that the lobster fishery exhibited a clear consultation process that provides an opportunity for all interested and affected parties to be involved. However, in November 2012, the Bahamas Spiny Lobster Working Group (SLWG) was formally approved by the government to provide a forum for key stakeholders to better manage the lobster fishery. Given sufficient supporting documentation, the fishery is expected to meet the SG80.

There is a risk that that not **all** stakeholders have representation within the SLWG. This could be mitigated by developing and maintaining a website that could provide portal to inform stakeholders and provide contact details to encourage engagement, which would meet SG100

PI3.1.3 Long Term Objectives

Total PI Score: 80

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.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Objectives	Long term objectives to guide decision-making, consistent with MSC fisheries standard and the precautionary approach, are implicit within management policy.	Clear long term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach, are explicit within management policy.	Clear long term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach, are explicit within and required by management policy

Current fisheries policy has general long term objectives outlined within the Fisheries Act (Chapter 244), which includes achieving maximum sustainable yields whilst ensuring the conservation of the resources, and reserving the 100% of the fishing rights within Bahamian waters to local people.

The Bahamas also has a 5-yr development plan, which includes as one of the key activities to achieve MSC certification. It is expected that the fishery will meet the SG80 level at minimum.

2.8.2 Fishery-specific Management System

PI3.2.1 Fishery-specific Objectives

Total PI Score: 60 – 80

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

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Objectives	Objectives , which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery-specific management system.	Short and long term objectives , which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.	Well defined and measurable short and long term objectives , which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.

With exception to the general long term objectives of the fisheries sector there are currently no formal fisheries-specific objectives in place. These have been included within a draft lobster Fisheries Management Plan (FMP), but this has not been submitted for adoption. Under these circumstances the fishery is unlikely to meet SG80.

In 2015, a lobster harvest strategy document was developed for review and adoption by the SLWG and DMR to include a summary of the current management measures, including short-term and long-term fishery-specific objectives. Once adopted by DMR, this is highly likely to meet the requirements at SG80.

PI3.2.2 Decision-making Processes

Total PI Score: 75 – 85

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

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Decision-making processes	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	

There are established decision making processes in place, including those of the SLWG, that are deemed sufficient to meet SG80. These have enabled fishery-specific management measures to be used within the fishery, such as a closed season, minimum size limits and should now include an annual review of the HCRs.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Responsiveness of decision-making processes	Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.

The decision making processes are considered sufficient to respond to serious and other important issues. Although no examples are currently available within the lobster fishery, actions were taken in a timely manner to respond to concerns over the status of Nassau grouper and conch. It could be argued that this demonstrates a willingness to respond sufficient to meet SG80. When the SLWG can be demonstrated to be working effectively, this is likely to meet SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Use of precautionary approach		Decision-making processes use the precautionary approach and are based on best available information.	

Decision making processes are based on the best available information. In addition, due to limited resources in both capacity and skills, it has been necessary to use a simple precautionary approach. For example, without prior knowledge of the status of the lobster stock, a suite of management measures were put in place that are designed to protect the resource from overexploitation. Furthermore, the Terms of Reference of the SLWG have been defined in terms of the FAO precautionary approach to fisheries management. This is expected to meet SG80.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
d. Accountability and transparency of management system and decision making process	Some information on fishery performance and management action is generally available on request to stakeholders	Information on fishery performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring evaluation and review activity.	Formal reporting to all interested stakeholders provides comprehensive information on fishery performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.

Information is available on fishery performance and management sufficient to meet SG60 and explanations have been provided for any actions or lack of action, where necessary.

There is a risk that a lack of transparency from SLWG meetings may put SG80 at risk. It will be incumbent on the Bahamas SLWG to provide a forum to discuss and disseminate information to stakeholders, providing full explanations for their decisions made. To date, the SLWG are working towards developing summary information of their meetings to be disseminated on the DMR website. When this has been achieved, it is highly likely to meet the SG80. Furthermore, if feedback could be reported in a formal manner on the management actions taken the fishery could meet SG100.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
e. Approach to disputes	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	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.

The fishery is in a position to comply in a timely fashion to judicial decisions arising from any legal challenges sufficient to meet SG80. To date, no ongoing court challenges are known to the reviewer.

It is not clear if or how the fishery acts in a proactive manner to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges to meet SG100.

PI3.2.3 Compliance and Enforcement

Total PI Score: 80

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

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. MCS implementation	Monitoring, control and surveillance mechanisms exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.

DMR and the RBDF have an established an MCS system, combining at sea, aerial and land based control. The control system at sea is implemented by the RBDF with a combination of three aircraft and between two and ten (planned and forecast) vessels including four new 40m (HMBS *Arthur Dion Hanna* (P421), HMBS *Durward Knowles* (P422), and HMBS *Leon Livingstone Smith* (P423) and the HMBS *Rolly Gray* (P424)) and four new 24m offshore patrol vessels (Stan Patrol 3007 Sea Axe patrol craft) to implement surveillance in Bahamas waters. This marks the conclusion of the first phase of the Sandy Bottom Project, a USD232 million programme to upgrade the RBDF's capabilities. The current two 60m patrol vessels HMBS *Bahamas* (P-60), along with sister ship HMBS *Nassau* (P-61) will be refit and once the new patrol vessels are in place and will be returned to duty. The Sandy Bottom project will enlarge the capacity and facilities of the RBDF base at Coral Harbour along with new bases in the Central and Southern Bahamas, including critically a new base at Ragged Island which would provide a base in one of the area's most at risk of IUU from the Dominican Republic. The current mechanisms ensure information about fisheries are collected and are capable of enforcing fisheries regulations. Data are available sufficient to meet SG80. It is recommended that this information be made available before the assessment.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Sanctions	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.

Sanctions exist in the forms of monetary penalties, prison sentences and confiscation / seizure of vessels, gear and catch, to deal with non-compliance (Statute Law of the Bahamas – Chapter 244 Fisheries Resources (Jurisdiction and Conservation). A record of court cases relating to fisheries exists detailing penalties applied to both Bahamian and foreign vessels but this is not publically distributed. There remains a risk that

stakeholders may question whether these are applied consistently and provide an effective deterrence at a domestic level. Although the provision of these enforcement records and publicity of court proceedings, confiscation and destruction orders would provide evidence sufficient to meet SG80.

Based on discussions held in 2012, this perceived lack of consistency may be due partly to misunderstanding and poor communication between stakeholders. In addition, recent publicity surrounding the arrests and convictions of a number of fishers from the Dominican Republic fishing illegally within Bahamian waters helps to demonstrate that sanctions are available and were consistently applied. It remains unclear at this time whether the level of sanctions (e.g. fines, confiscation of vessels etc.) is providing an effective deterrent.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
c. Compliance	Fishers are generally thought to comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.

Evidence exists to demonstrate fishers comply and interact with the management system under assessment. Information of importance to the effective management of the fishery is supplied on catch, suspected IUU vessel operations and information of undersized lobster. The capture of undersized or berried lobster by the legal Bahamas fleet has been reduced or removed after monitoring of the average tail size at processors has been implemented and a significant decline in the capture of undersized lobster was observed. Spatio-temporal closures are observed by the fleet under assessment. This evidence is expected to be sufficient to meet SG80.

There is a risk, however, that undersized lobsters are being caught through IUU fishing and distributed elsewhere but the level of IUU and therefore quantity is not thought to put the fishery at risk. In addition, it is known that undersized lobsters only occur in the processing chain when there is no annual education and outreach program. It is recommended that these continue and should be strengthened (additional locations), where necessary.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
d. Systematic non-compliance		There is no evidence of systematic non-compliance.	

Some stakeholders have highlighted that limited IUU fishing is likely to occur within the domestic fishery and there is a high risk of illegal fishing from the Dominican Republic. Although the level of risk of IUU is high, the actions taken by DMR and RBDF in combating IUU is also high and with the current expansion of MCS capacity this will allow for continual surveillance of the high risk areas to the south of the Great Bahama

Bank and the development of a permanent base on Ragged Island would only further strengthen this capacity.

There is some evidence to suggest that a significant proportion of lobster previously landed were undersized (13% below 5oz), although the level of undersized lobster exported via processors (the majority of reported catch) is thought to be negligible. More recent evidence that the current level of undersized lobsters landed are now at an acceptable level is required to meet SG80.

Risk

Previous concerns have been raised over the risk of IUU fishing from foreign vessels, particularly Dominican Republic vessels operating in south of the Bahamas EEZ. This led to a series of high level bilateral meetings in addition to the Bahamas strengthening the level of fisheries MSC through the acquisition of new patrol vessels and training for the RBDF. Following a series of high profile prosecutions, no further arrests have been reported that would indicate systematic non-compliance.

Recommendation

It is recommended that to meet the SG100 for MCS Implementation that a number of elements are addressed to emphasis the comprehensive nature of the MCS system. These include collation and use of intelligence information in a coordinated fashion (i.e. from fishers, aerial surveillance), risk based assessment and planning and dissemination. It is highly recommended that more information is collected on the potential risk of IUU fishing, both from the domestic and international fleets. This could occur through documenting the level surveillance, number of infringements and successful prosecutions. This will also support the results of the stock assessment to ensure all sources of removal are accounted for in the assessment.

It is recommended that to meet the SG100 for the sanctions PI that the number of offences committed are analysed against indicators of control activity (recommended as part of the IUU assessment) to demonstrate that sanctions are at a level required to. It would also be beneficial to compare economically the net gain for illegal fishing when detected against operating costs and sanction level (including "costs" of non-financial sanctions) to show the level of sanctions are appropriate for the value of fisheries of the Bahamas.

It is recommended that the level of tolerance of undersized lobster is obtained from each processor to determine what is deemed an acceptable level of non-compliance. It is also recommended that to ensure compliance a detailed logsheet based catch and effort recording system is implemented for the Bahamas lobster fishery.

PI3.2.5 Monitoring and Management Performance Evaluation

Total PI Score: 70 – 80

There is a system for monitoring and evaluating the performance of the fishery-specific management system against its objectives.

There is effective and timely review of the fishery-specific management system

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
a. Evaluation coverage	There are mechanisms in place to evaluate some parts of the fishery-specific management system.	There are mechanisms in place to evaluate key parts of the fishery-specific management system.	There are mechanisms in place to evaluate all parts of the fishery-specific management system.

Currently, the fishery management system is undergoing rigorous evaluation as part of the FIP Action Plan sufficient to meet SG80.

Risk

There is a risk that the full assessment will be looking for medium to long-term evaluation coverage, which extends beyond the life of the FIP. Under these circumstances, it is recommended that either DMR or SLWG take responsibility for this after the FIP and ensure this scoring issue meets SG80.

A draft document has been produced for approval and adoption by the SLWG and DMR to document the review of the management system. Once adopted, this is highly likely to meet the SG80 level.

Scoring Issue	60 Guideposts	80 Guideposts	100 Guideposts
b. Internal and/or external review	The fishery-specific management system is subject to occasional internal review.	The fishery-specific management system is subject to regular internal and occasional external review.	The fishery-specific management system is subject to regular internal and external review.

From the work carried out under the FIP and review process has been initiated and can form the basis for an external and internal review.

The fishery may not be able to demonstrate that the management system is subject to both regular internal and external review over the medium to long-term to meet SG100.

2.8.3 Summary of progress under P3

The following table provides an overview of the range of likely scores given to each PI under P3.

It is considered borderline whether the fishery will pass P3 (average score 80 or above), and every effort should be made to maximize scoring opportunities, particularly in three Performance Indicators: PI 3.2.1 Fishery Specific Objectives; PI 3.2.3 Compliance and Enforcement; and, PI 3.2.5 Management Performance Evaluation.

Performance Indicator		Likely score
3.1.1	Legal and/or Customary Framework	80 – 85
3.1.2	Consultation, Roles & Responsibilities	80
3.1.3	Long Term Objectives	80
3.2.1	Fishery Specific Objectives	60 – 80
3.2.2	Decision Making Processes	75 – 85
3.2.3	Compliance & Enforcement	80
3.2.5	Management Performance Evaluation	70 – 80
Total		75.6 – 81.5

2.8.4 Possible Conditions under P3

There are currently three conditions that might be placed on the fishery at the current time. These are described in more detail below.

PI 3.2.1 Fishery-specific objectives

- (a) **Short and long term objectives**, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are **explicit** within the fishery-specific management system.

With exception to the general long term objectives of the fisheries sector there are currently no formal fisheries-specific objectives in place. These have been included within a draft lobster Fisheries Management Plan (FMP), but this has not been submitted for adoption. Under these circumstances the fishery is unlikely to meet SG80.

In 2015, a lobster harvest strategy document was developed for review and adoption by the SLWG and DMR to include a summary of the current management measures, including short-term and long-term fishery-specific objectives. Once adopted by DMR, this is highly likely to meet the requirements at SG80 (Task 4.5.4, 2015 FIP Action Plan).

PI 3.2.2 Decision-making processes

- (d) **Information on fishery performance and management action is available on request**, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring evaluation and review activity.

There is a risk that a lack of transparency from SLWG meetings may put SG80 at risk. It will be incumbent on the Bahamas SLWG to provide a forum to discuss and disseminate information to stakeholders, providing full explanations for their decisions made. To date, the SLWG are working towards developing summary information of their meetings to be disseminated on the DMR website. When this has been achieved, it is highly likely to meet the SG80. Furthermore, if feedback could be reported in a formal manner on the management actions taken the fishery could meet SG100 (Task 4.1.2, 2015 FIP Action Plan).

PI 3.2.5 Management Performance Evaluation

- (a) There are mechanisms in place to evaluate **key** parts of the fishery-specific management system.

There is a risk that the full assessment will be looking for medium to long-term evaluation coverage, which extends beyond the life of the FIP. Under these circumstances, it is recommended that either DMR or SLWG take responsibility for this after the FIP and ensure this scoring issue meets SG80.

A draft document has been produced for approval and adoption by the SLWG and DMR to document the review of the management system. Once adopted, this is highly likely to meet the SG80 level (Task 4.5.4, 2015 FIP Action Plan).

2.8.5 Recommendations under Principle 3

- The results of the 2013 ACP FISH II study to support update of the Fisheries Act in the Bahamas provided a number of key recommendations that should be followed (Task 4.2.3, 2015 FIP Action Plan):
 - “Initiate a process to take forward the proposed Act, with a view to being able to introduce a Bill within one year.
 - The draft text should be consulted on further.
 - The draft text should be submitted to legal drafters in the Attorney General’s Office at an early stage.
 - A strategy will need to be developed and carried out at the political level in order to ensure the proposal receives sufficient priority and attention in the national political and parliamentary institutions. Implementation of this strategy will require cooperation between DMR and other stakeholders.”
- While a FIP communications plan (CP) for the overall FIP Action Plan has now been dropped (Task 2.1), education and outreach programmes for specific activities should continue, especially for enforcing management regulations and informing the fishing community of the new HCRs and tools and existing management measures (Task 2.3.1, 2015 FIP Action Plan).
- DMR to adopt the approved Bahamas Lobster Harvest Strategy document, which has been reviewed and approved by members of the SLWG in 2015 and includes a description of both the short and long-term objectives of the fishery (Task 4.5.4, 2015 FIP Action Plan).
- Members of the SLWG to make explicit that they use the FAO Code of Conduct (precautionary approach) to manage the lobster fishery (Task 4.1.2, 2015 FIP Action Plan).
- The SLWG to provide a summary of their meetings, and explain what has been discussed and the main outcomes, including reasons for their decision and indicate how stakeholders can get in touch (e.g. DMR website) (Task 4.1.2, 2015 FIP Action Plan).
- It is recommended that a number of elements are addressed to emphasize the comprehensive nature of the MCS system. These include collation and use of intelligence information in a coordinated fashion (i.e. from fishers, aerial surveillance), risk based assessment and planning and dissemination. It is highly recommended that more information continue to be collected on the potential risk of IUU fishing, both from the domestic and international fleets. This could occur through documenting the level surveillance, number of infringements and successful prosecutions. This will also support the results of the stock assessment to ensure all sources of removal are accounted for in the assessment (Task 3.1.4, 2015 FIP Action Plan).
- It is recommended that to meet the SG100 for the sanctions PI that the number of offences committed are analysed against indicators of control activity (recommended as part of the IUU assessment) to demonstrate that sanctions are at a level required to deter IUU fishing. It would also be beneficial to compare economically the net gain for illegal fishing when detected against operating costs and sanction level (including “costs” of non-financial sanctions) to show the

level of sanctions are appropriate for the value of fisheries of the Bahamas (Task 3.1.1, 2015 FIP Action Plan).

- It is recommended that the level of tolerance of undersized lobster is obtained from each processor to determine what is deemed an acceptable level of non-compliance (Task 3.1.6, 2015 FIP Action Plan). It is also recommended that to ensure compliance a detailed logsheet based catch and effort recording system is implemented for the Bahamas lobster fishery Bahamas (Tasks 1.1.2, 1.1.3, 1.1.4, 2015 FIP Action Plan).
- In the short-term, implementation of the FIP Action Plan is considered a sufficient mechanism to satisfy SG80 to provide a research plan and provide timely dissemination of the results (previous Task 4.11, 2014 FIP Action Plan). However, it should be noted that this PI has been deleted from the latest MSC Certification Requirements version 2.0, and this task has now been removed from the Action Plan.
- To demonstrate the evaluation of management performance, a number of tasks may be performed. In the short-term these include the adoption of the approved 'Bahamas Lobster Harvest Strategy' document and adoption of the approved 'Bahamas Lobster Fishery Management' document (Task 4.5.4, 2015 FIP Action Plan).
- In the medium-term it is recommended to review and update of the FMP and gain a letter of support to implement the FMP (Task 4.6, 2015 FIP Action Plan).
- To ensure the stock assessment methodology and assessment results are externally reviewed and the overall results reviewed against the fishery-specific objectives set out in the Bahamas Lobster Harvest Strategy document. To date, the FMP has not been adopted and it remains that the SLWG should be responsible for the monitoring and evaluation of internal management performance (Tasks 4.1.4, 4.5.2, and 4.5.3, 2015 FIP Action Plan).

3 SUMMARY

A summary of the scores under each Principle is given in the table below. This shows that the expected average score for all PIs under each principle are very close to meet the MSC standard. However, **without further action taken before the fishery enters full assessment, the fishery is not expected to pass at this time**. It is therefore very important to consider the proposed key actions within section 4 below.

MSC Principle	Fishery Performance
Principle 1: Sustainability of Exploited Stock	Overall: 76.7 – 87.5
Principle 2: Maintenance of Ecosystem	Overall: 80.5 – 85.2
Principle 3: Effective Management System	Overall: 75.6 – 81.5

It is important to note that the results from P1 are mostly based on the 2012 stock assessment, which currently reduces the average score below 80. If the 2014 stock assessment can be reviewed and implemented, the scores for P1 increase above 80. Changes to MSC scoring has benefited P2, as there are considered to be no primary species retained, and thus increase the average score to around 80 or higher.

Furthermore, if all tasks and recommendations were not to be completed there is a risk that the fishery will not pass an MSC assessment under P1 and P3 at this time. By maximizing the potential scores under each performance indicator, the risk of failing an assessment notably reduces, although the outcome of alternative scoring scenarios has not been undertaken at this time.

4 NEXT STEPS

The Bahamas lobster fishery continues to make significant progress towards the MSC standard, including an updated stock assessment and formal adoption of harvest control rules. The fishery is now considered to be on the verge of meeting the MSC Standard and the following summary provides an outline of the next steps required to attain this important goal.

To date, almost all fisheries that have successfully progressed to an MSC full assessment has been recommended for certification but with conditions set for continuing certification. These conditions may relate to operational and management functions. The client is then responsible for ensuring that these conditions are met within the required timescale. The client should therefore have authority, or have secured agreement with the relevant organizations, to enact potential conditions should certification be successful.

Before moving forward to an MSC assessment, the next steps will be to update the 2014 FIP Action Plan based on this review of information, to either remove existing tasks that are deemed no longer appropriate and/or include others that have been developed following implementation of the Plan.

Clearly, each of the recommendations under P1, P2 and P3 should be reviewed critically by DMR and other stakeholders to determine what action can be taken and when. It is recommended that activities within the FIP Action Plan are reviewed on a regular basis

by SLWG to ensure they are making sufficient progress and to highlight any problems that may require additional input to resolve in an efficient manner.

4.1 Key issues to address before entering MSC full assessment

Principle 1

- Update the 2014 stock assessment using the latest available data for 2014 and 2015 fishing seasons including **(Tasks 1.1, 4.7.1 and 4.7.2, 2015 FIP Action Plan)**.
- Conduct full independent evaluation of model (incl. alternative hypotheses and assessment approaches) and HCRs (internal only). Evidence is required, such as testing the software with simulated data, to allow such an evaluation to take place including **(Tasks 1.1, 4.7.1 and 4.7.2, 2015 FIP Action Plan)**.
- To review to assessment both internally and externally so that it can be used in 2015/16 season including **(Tasks 1.1, 4.7.1 and 4.7.2, 2015 FIP Action Plan)**.
- DMR to demonstrate they continue to collect reliable fisheries statistics. Consideration should be taken to strengthen and improve the level of resolution of the data, including information on local landings from all major islands, catch location, size information, more accurate fishing effort records etc. This will facilitate better management of lobster on a bank-by-bank basis in future **(Tasks 1.1 and 1.2, 2015 FIP Action Plan)**
- Continue and extend the education and outreach program of catching illegal lobster to support the harvest strategy and new HCRs throughout the Bahamas archipelago (e.g. undersized lobster, development of voluntary log book for sustainable catch certification program etc; catch location etc) **(Task 2.2.1, 2015 FIP Action Plan)**.
- SLWG to review outputs from latest assessment and report what actions have been taken and explain why in a transparent manner **(Tasks 1.1, 4.1.2, 2015 FIP Action Plan)**.

Principle 2

- Demonstrate a number of management measures that are deemed to form part of an ETP strategy have been fully considered. It is recommended that the SLWG review ETP interactions and provide evidence that these issues have been considered in full and to draft a specific ETP strategy document, where necessary **(Task 4.1.3, 2015 FIP Action Plan)**.
- Provide evidence to demonstrate that the turtle and shark bans are working in the Bahamas **(Task 1.4.3, 2015 FIP Action Plan)**.
- Identify all current and previous information and monitoring on habitat and ecosystems within the Bahamas (e.g. reef fish counts, coral-bleaching studies, seagrass monitoring etc.) to demonstrate impact of fishery is low/negligible **(Task 1.5.4, 2015 FIP Action Plan)**.
- Mr. Gittens (DMR) to be commissioned to provide a short summary of his research findings (unpublished), conclusions and recommendations to support the full assessment before the site visit takes place **(Task 1.5.5, 2015 FIP Action Plan)**.

- Ensure ongoing support to Mr. Gittens to help determine the likely impact of condominiums on the ecosystem, which includes a preliminary understanding of their aggregating and/or their role in increasing lobster productivity **(Task 1.5, 2015 FIP Action Plan)**.

Principle 3

- Continue education and outreach programmes to address enforcement of management regulations and informing the fishing community of the new HCRs and tools and existing management measures **(Task 2.3.1, 2015 FIP Action Plan)**.
- DMR to adopt the approved Bahamas Lobster Harvest Strategy document, which has been reviewed and approved by members of the SLWG in 2015 and includes a description of both the short and long-term objectives of the fishery **(Task 4.5.4, 2015 FIP Action Plan)**.
- The SLWG to provide a summary of their meetings, and explain what has been discussed and the main outcomes, including reasons for their decision and indicate how stakeholders can get in touch (e.g. DMR website) **(Task 4.1.2, 2015 FIP Action Plan)**.
- Members of the SLWG to make explicit that they use the FAO Code of Conduct (precautionary approach) to manage the lobster fishery **(Task 4.1.2, 2015 FIP Action Plan)**.
- To demonstrate the evaluation of management performance, a number of tasks may be performed. In the short-term these include the adoption of the approved 'Bahamas Lobster Harvest Strategy' document and 'Bahamas Lobster Fishery Management' document **(Task 4.5.4, 2015 FIP Action Plan)**.

4.2 Highly recommended issues to address

Principle 1

- Increase size, sex and maturity sampling, so samples are taken every month and samples are taken from a range of gear types. This should allow improved selectivity functions within the assessment model in future. This should be considered as part of improved data collection and monitoring of the fishery **(Task 1.2.3, 2015 FIP Action Plan)**.
- Develop program to conduct routine auditing of restaurants for undersized/ out-of-season lobster **(Task 3.3.3, 2015 FIP Action Plan)**.

Principle 2

- SLWG to review potential impacts of fishery on different habitat types in Bahamas and recommend new management measures/strategy, where necessary, to limit the impacts of the fishery and provide adequate monitoring **(Tasks 1.5.4 and 4.1.3, 2015 FIP Action Plan)**.
- Update data capture forms to collect information on the number or location of gear deployed in the fishery to provide quantitative information to determine the likely impact of fishing on habitats. Specific details of the monitoring program can be determined following the results of the ecosystem research study **(Tasks 1.2.3, 1.5.3, 2015 FIP Action Plan)**.

- Conduct further education and outreach programs on all major islands to explain the importance of the DMR Landing Forms and EU catch certificate program to include additional information on all other retained species **(Task 2.3; 2015 FIP Action Plan)**.

Principle 3

- Review and uptake recommendations of 2013 ACP FISH II study to support update of the Fisheries Act in the Bahamas **(Task 4.2.3, 2015 FIP Action Plan)**.
- Analyse the number of offences committed against indicators of control activity (recommended as part of the IUU assessment) to demonstrate that sanctions are at a level required to deter IUU fishing. It would also be beneficial to compare economically the net gain for illegal fishing when detected against operating costs and sanction level (including “costs” of non-financial sanctions) to show the level of sanctions are appropriate for the value of fisheries of the Bahamas **(Task 3.1.4, 2015 FIP Action Plan)**.
- Obtain the level of tolerance of undersized lobster from each processor to determine what is deemed an acceptable level of non-compliance **(Task 3.1.6, 2015 FIP Action Plan)**.
- Implement a detailed logsheet based catch and effort recording system for the Bahamas lobster fishery Bahamas to ensure compliance **(Tasks 1.1.2, 1.1.3, 1.1.4, 2015 FIP Action Plan)**.
- In the medium-term it is recommended to review and update of the FMP and gain a letter of support to implement the FMP **(Task 4.6, 2015 FIP Action Plan)**.

5 APPENDIX 1: List of participants

Name	Title	Affiliation
Mr. Michael Braynen	Director	Department of Marine Resources
Mr. Lester Gittens	Science and Conservation Unit	Department of Marine Resources
Mr. Gilford Lloyd	Senior Fisheries Officer	Department of Marine Resources
Mr. Glenn Pritchard	Vice President	Bahamas Marine Exporters Association
Mr. Keith Carroll	Commercial Fisherman	Fishery Advisory Committee, New Providence- BCFA
Mia Isaacs	President	Bahamas Marine Exporters Association
Harold Johnson	Exporter	Board Walk Seafood - Grand Bahama
Felicity Burrows	Marine Conservation Specialist	The Nature Conservancy
Casuarina McKinney-Lambert	Executive Director	Bahamas Reef Environmental Educational Foundation (BREEF)
Robert Roberts	SLWG member	Spanish Wells
Garnet (George) Armbrister	Fisherman	West End, Grand Bahama
Dalson Stuart	Fisherman	Moores Island
Osbourne Stuart	Fisherman	Moores Island
Kirt Neeley	Buyer	CEO Boardwalk Seafood
Cleveland Wells	Buyer	Golf Stream Seafood Services
Shawn Turnquest	Buyer	Hurricane Seafood
Terrance Pinder	Fisherman	Sandy Point
Rochelle Newbold	National GEF FSP Coordinator	Consultant-BEST Commission
Douglas Saunders	Fishermen	Mangrove Cay
Vallierre Deleveaux	Director of Marine Science	BAMSI
Patrick Knowles	Fisherman	South Andros
Wendy Goyert	Senior Program Officer	WWF
Dr. Robert Wakeford	Technical Director	MRAG
Trudy Armbrister	Buyer	NLD Seafood - Grand Bahama
Jay Lugar	Fisheries Outreach Manager	Marine Stewardship Council
Wendall Saunders	Buyer	Grand Cay Abaco

Name	Title	Affiliation
Jon Chaiton	Director of Seafood Quality Assurance Lab	Tropic Seafood
Jacklyn Chisholm	Professor	College of the Bahamas
Chris Duncombe		Kerzner (Atlantis)
Olivia Patterson	Conservation Coordinator	Friends of the Environment
Jude Knowles	Fisherman	Long Island
Angel Colebrooke	Buyer	South Andros
Sharease Rolle	SLWG member	North Abaco Fishing Cooperative
Agnessa Lundy	Project Coordinator	The Bahamas National Trust
Karen Rahming	Secretary and Treasure	BMEA
Indira Brown	assistant fisheries officer	Department of Marine Resources
Cecil Stuart	Fisherman and Buyer	
Bruce Beneby	Purchaser	Atlantis
John Pearce	Consultant	MRAG Ltd.
Whitfield Neely		Royal Bahamas Defense Force
Kendall Carroll	Fisherman	
Jonisha Cartwright	Education Officer	BREEF
Shenique Smith	Country Rep	TNC
Mr. Cooper	Undersecretary	The Ministry of Marine Resources

6 APPENDIX 2: Meeting Agenda

Tuesday May 19th, 2015 – FIP Review

- 9:00 a.m. Welcome & Introductions (Felicity Burrows, TNC)
- 9:20 a.m. [Presentation 1](#): FIP Programmatic Update (Wendy Goyert, WWF and Felicity Burrows, TNC)
- 9:45 a.m. [Presentation 2](#): Overview of FIP: Impact of changes to MSC Certification Requirements (Robert Wakeford, MRAG)
- 10:15 a.m. [Presentation 3](#): Update – Bahamas Spiny Lobster Working Group (Mia Isaacs, BMEA)
- 10:30 a.m. Break**
- 10:45 a.m. FIP Action Plan - MSC Principle 1: Stock status (MRAG)
- 11:00 a.m. [Presentation 4](#): Update – stock assessment and Harvest Control Rule (Lester Gittens, DMR)
- 11:15 a.m. Review of progress against Principle 1 Performance Indicators (MRAG)
- 11:45 a.m. FIP Action Plan - MSC Principle 2: Ecological and Ecosystem (MRAG)
- 12:00 p.m. [Presentation 5](#): Lobster trap bycatch study - update (Robert Wakeford, MRAG)
- 12:15 p.m. Lunch (provided)**
- 1:15 p.m. [Presentation 6](#): Update – Ecosystem impacts of fishery on ecosystem (Lester Gittens, DMR)
- 1:30 p.m. Review of progress against Principle 2 Performance Indicators (MRAG)
- 1:45 p.m. FIP Action Plan - MSC Principle 3: Management and governance (MRAG)
- 2:00 p.m. Recent Changes in Spiny Lobster Fisheries Policy & Management, Minister Gray
- 2:20 p.m. [Presentation 7](#): Update on current status of P3 issues, including IUU activities, update (Michael Braynen, DMR)
- 2:30 p.m. [Presentation 8](#): IUU Risk Assessment (John Pearce, MRAG)
- 4:20 p.m. Review of progress against Principle 3 Performance Indicators (MRAG)
- 4:30 p.m. End of Day 1

Wednesday May 20th, 2015 – RBF Workshop

9:00 a.m.	Start of Day 2 – Introductions for new participants (Felicity Burrows, TNC)
9:15 p.m.	Presentation 9 : MSC Risk-Based Framework – An introduction (MRAG)
10:00 a.m.	RBF – Primary and secondary species (MRAG)
10:30 a.m.	Break
10:45 a.m.	RBF – Primary and secondary species (Cont'd)
12:00 a.m.	Discussion RBF – Primary and secondary species
12:15 p.m.	Lunch (provided)
1:15 p.m.	RBF – Habitat (MRAG)
2:30 p.m.	Discussion RBF – Habitat
2:45 p.m.	RBF – Ecosystem (MRAG)
3:30 p.m.	Discussion RBF – Ecosystem
3:45 p.m.	Implications for MSC full assessment
3:55 p.m.	Next Steps
4:00 p.m.	End of meeting