WEST COAST ROCK LOBSTER
HARVEST STRATEGY AND CONTROL RULES
2014 – 2019

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INTRODUCTION

The *Fish Resources Management Act 1994* (the Act) provides the overarching legislative framework for management of the West Coast Rock Lobster Fishery (the Fishery). The objects of the Act are: (a) to develop and manage fisheries and aquaculture in a sustainable way; and (b) to share and conserve the State's fish and other aquatic resources and their habitats for the benefit of present and future generations.

Consistent with the objects of the Act, the Harvest Strategy and Control Rules (HSCR) for the Fishery will be used to set the Total Allowable Commercial Catch (TACC). The HSCR will also provide the Allowable Harvest Level (AHL) for the western rock lobster resource (i.e. the total quantity of lobster that can be taken by the commercial and recreational sectors combined) from which the Allowable Recreational Catch is determined in accordance with the principles of Integrated Fisheries Management (IFM)[1].

The HSCR was developed in consultation with the Western Rock Lobster Council (WRLC), having regard for the outcome of broader industry consultation on two discussion papers:

- Fisheries Management Paper 254. *West Coast Rock Lobster Managed Fishery Harvest Strategy and Decision Rules Framework Proposals Under a Quota Management System - A Discussion Paper* (2012) http://www.fish.wa.gov.au/Documents/management_papers/fmp254.pdf
- Fisheries Management Paper 263. *West Coast Rock Lobster Harvest Strategy and Control Rules 2015 – 2019 - A Discussion Paper* (2013) http://www.fish.wa.gov.au/Documents/management_papers/fmp263.pdf

[1] see *Considerations for the Implementation of Western Rock Lobster Sectoral Allocations.* Fisheries Management Paper 236 at http://www.fish.wa.gov.au/Documents/management_papers/fmp236.pdf

1.0 OBJECTIVES

1.1 Sustainability Objective

The Sustainability Objective is the primary objective of the HSCR, and must be met irrespective of other principles or objectives in the HSCR.

Sustainability Objective:

To ensure that the egg production in Breeding Stock Management Areas of the Fishery (see Appendix 1) remains above its threshold value for the next five years with a probability greater than 75%.

There are four Breeding Stock Management Areas (BSMAs) which will be used to assess the status of the fishery (Appendix 1, Figure 1).

Appendix 1, Table 1 provides a description and threshold reference years for each of the BSMAs.

Should modelling indicate that the threshold level in any one of the BSMAs may be breached within the five year projected time period, management action would be required to ensure that there is no breach of the threshold level. This would include a reduction in the Legal Proportion Harvested (LPH) through a change in the biological controls, or more likely a reduction in the TACC for the relevant Zone(s).

Further detail on how this would be applied can be found at Appendix 2.

1.2 Harvest Objective

The Harvest Objective is to be used to determine the maximum LPH for the Fishery based on Maximum Economic Yield (MEY). The maximum LPH is used to determine the AHL for the resource.

Harvest Objective:

Once the Sustainability Objective has been satisfied, TACCs for the Fishery shall use MEY to determine an optimal range of LPH that would optimise the economic performance of the Fishery by achieving optimal stock abundance and catch rates, and thereby providing high economic returns and greater amenity to the Fishery and the WA community.

For the purposes of the HSCR the "optimal LPH range" will be determined by 99% MEY (i.e. 99% average Net Present Value [NPV]). This is illustrated in Figure 1.

As MEY usually generates a catch level which is below Maximum Sustainable Yield, application of the Harvest Objective should represent a conservative first step in the TACC setting process. However, precedence must always be given to achieving the Sustainability Objective. This is to ensure that, in the unlikely event that the application of the Harvest Objective results in egg production that falls below the threshold levels in one or more of the BSMA's, the LPH for the relevant Zone would be reduced until the Sustainability Objective was met. In this instance the Harvest Objective would not be used for determining the TACC(s) for the affected Zone(s).

The Harvest Objective does not require that the TACC be set within the optimal LPH range (i.e. 99% MEY), provided it is set below the maximum LPH. However industry will need to provide some justification should it recommended the TACC be set below the optimal LPH range.

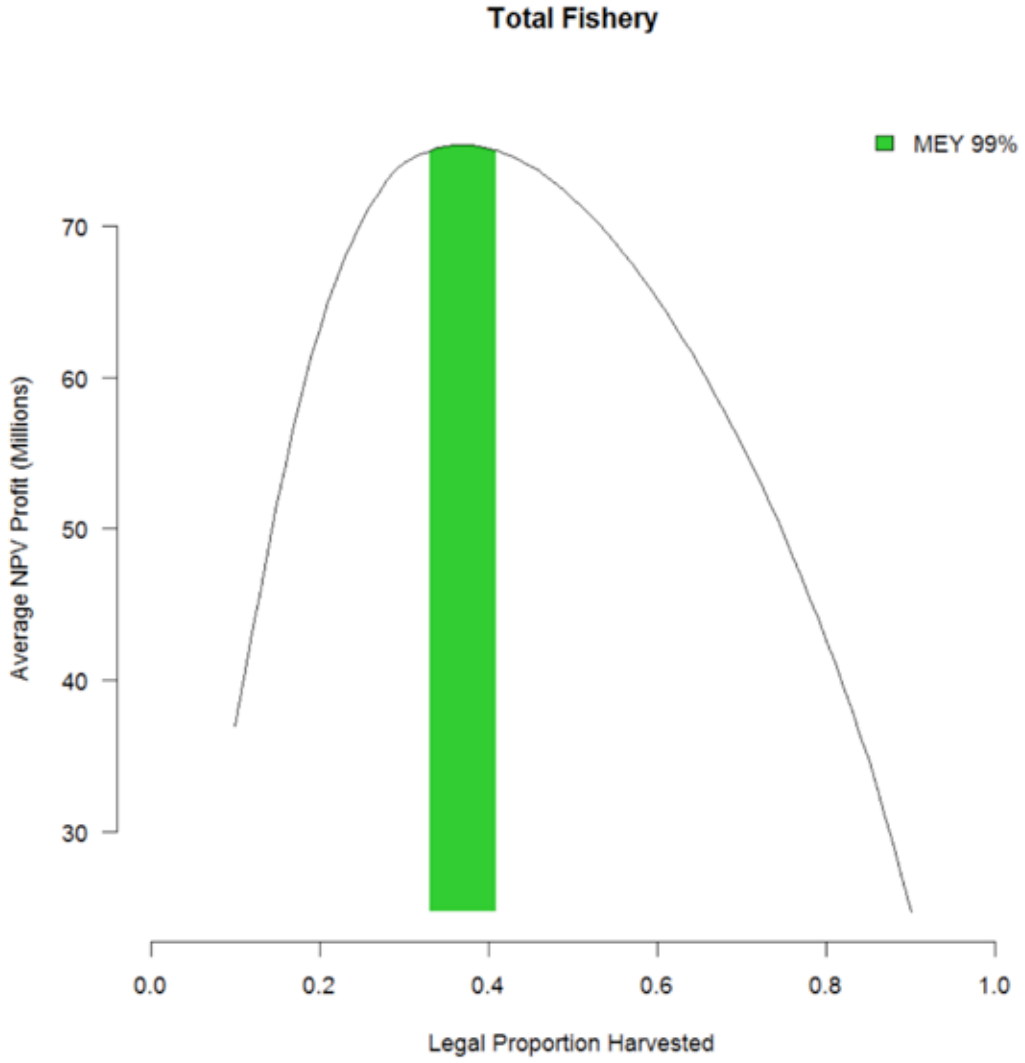


Figure 1. Example of MEY assessment showing the LPH range (green), based on a 12 month season and existing biological controls, which results in 99% of the maximum NPV for the West Coast Rock Lobster Fishery over the next 5 years.

2.0 KEY MANAGEMENT PRINCIPLES

The key principles that underpin the HSCR are:

1. The TACC will be equal in the northern Zones (i.e. Zones A and B) and Zone C (50% Zones A and B and 50% to Zone C). This principle will be applied after the AHL for the Fishery has been set under both the Harvest and Sustainability Objectives.
2. The proportional allocation of the TACC between Zone A and Zone B will continue to be fixed at the ratio of 0.36 to Zone A and 0.64 to Zone B. This is consistent with the historic 10-year average between the 1998/99 and 2007/08 seasons and has been used as the basis for setting catch allocations since TACCs were introduced for each Zone.
3. Given there is some uncertainty regarding the stock abundance and the preliminary threshold and limit that have been set for BSMA 1 (Big Bank), the abundance of lobsters in BSMA 1 will not contribute to the TACC setting process even if Big Bank is re-opened. This ensures that a precautionary approach to managing breeding stocks in the northern part of the fishery is maintained. This will be re-examined when the HSCR is reviewed.

3.0 TACC SETTING PROCESS

The process for setting TACCs and the Allowable Recreational Catch (for IFM purposes) is set out below and illustrated in Figure 2:

1. Determine the optimal LPH range through the Harvest Objective;
2. Ensure Sustainability Objective is met in all BSMAs;
3. If Sustainability Objective is not met in a BSMA, reduce the LPH in the relevant Zone or Zones until the Sustainability Objective is met (see Appendix 2);
4. The highest LPH within the optimal range that results from the Harvest Objective (or through the reduced LPH if the Sustainability Objective is not met) will determine the Upper TACC limit for the commercial Fishery. This is then used to determine the AHL though the following formula:
    - AHL = Commercial Upper TACC Limit/0.95

    Therefore the allowable catch for each sector is determined by:
    - Allowable Recreational Catch = AHL x 0.05; and
    - Allowable Commercial Catch = AHL x 0.95
5. The WRLC will provide TACC recommendations based on an equal TACC for Zones A/B and Zone C taking into account the catch ranges derived in step 3 above;
6. The TACC for Zones A/B will then be proportioned 0.36 to Zone A and 0.64 to Zone B; and
7. The resulting TACC recommendations will then be provided to the Minister for consideration, and the Management Plan will be amended accordingly.

Harvest Strategy and Control Rules Flow Chart

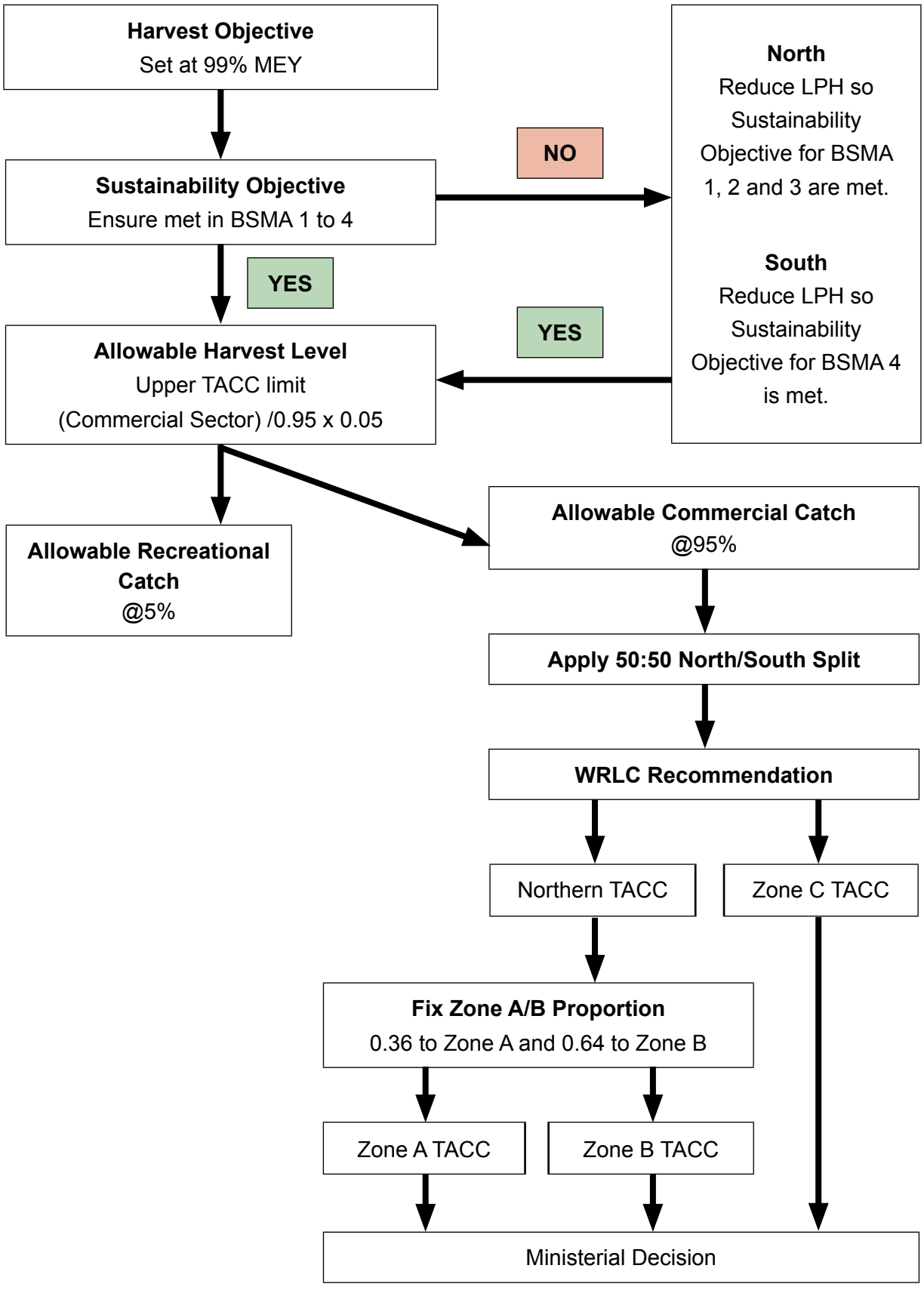


Figure 2. Flow chart illustrating the TACC setting process under the HSCR.

APPENDIX 1

In general, the purpose of the Sustainability Objective is to ensure that egg production in all areas of the Fishery does not fall below the levels that were observed prior to the increase in fishing effort and efficiency through technology uptake that occurred around the mid-1980s throughout much of the fishery (BSMA 2 – 4). In BSMA 1 the mid-1990s period is used as this area was only lightly exploited prior to this. These levels are known as the "threshold values". To ensure long term sustainability, egg production is projected out five years into the future and takes into account both puerulus settlement and future catch setting arrangements.

It is important to note that preliminary threshold and limit reference points for BSMA 1 have been determined and will be reviewed in the next 3 – 5 years as additional data is collected in this region. Despite these reference points being preliminary for BSMA 1, a breach of them would still necessitate management action.

Northern region (Zones A and B)

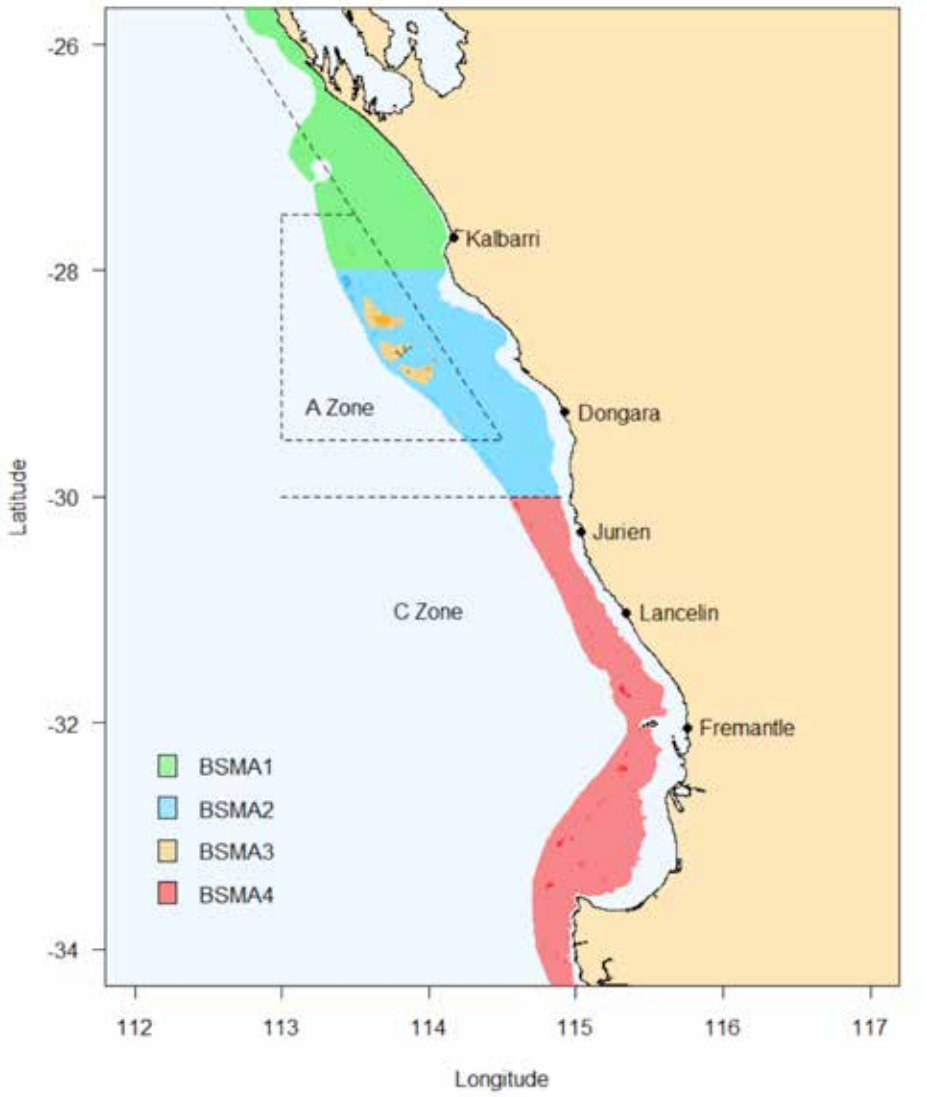
BSMA 1 – Deepwater areas (>20 fm) of the fishery north of 28ºS. This encompasses the northern Abrolhos Is. and Big Bank regions.

BSMA 2 – Deepwater areas (>20 fm) of the fishery between 28º and 30ºS. This encompasses southern Abrolhos Is. and offshore Geraldton and Dongara areas.

BSMA 3 – Shallow Abrolhos Islands (<20 fm around the Abrolhos Is.)

Southern region (Zone C)

BSMA 4 – Deepwater areas (>20 fm) of the fishery south of 30ºS. This encompasses all Zone C deepwater.



Appendix 1, Figure 1. Four Breeding Stock Management Areas (BSMA) covering areas of significant egg production throughout the fishery.

Appendix 1, Table 1. Description and threshold reference years for each of the four breeding stock management areas. Note that egg production limit values are set 20% below the threshold values.

	Description	Threshold reference years	
BSMA 1	Deep water areas north of 28°S	Preliminary estimate only mid-1990s, but will be revised as more years of survey data become available	1994 – 1996
BSMA 2	Deep water areas between 28° and 30°S	Mid-1980s	1984 – 1986
BSMA 3	Shallow Abrolhos Islands areas	Mid-1980s	1984 – 1986
BSMA 4	Deep water areas south of 30°S	Mid-1980s	1984 – 1986

APPENDIX 2

Application of the Sustainability Objective – Zones A and B

Zones A and B – BSMA 1, 2 and 3	
Projected Indicator Value - egg production	**Management Response**
Is above the threshold value for the next five years with 75% confidence.	TACC to be set based on Harvest Objective.
Less than 75% probability that the indicator will be above the threshold value in BSMA 1, 2 or 3 in any year(s) in the next five years.	Adjust the TACC down in the combined Zones A and B, and if necessary, take other management action to bring the egg production indicator above the threshold value with a 75% probability.
Less than 75% probability that the indicator is above the limit value in BSMA 1, 2 or 3 in any year(s) in the next five years.	Significantly reduce the combined Zones A and B TACC and or implement large scale area/ Zone closures until the egg production indicator is projected to be back above the threshold value with a 75% probability.

Application of the Sustainability Objective – Zone C

Zone C – BSMA 4	
Projected Indicator Value - egg production	**Management Response**
Is above the threshold value for the next five years with 75% confidence.	TACC to be set based on Harvest Objective.
Less than 75% probability that the indicator will be above the threshold value in any year(s) in the next five years.	Adjust the TACC down in Zone C, and if necessary, take other management action to bring the egg production indicator above the threshold value with a 75% probability.
Less than 75% probability that the indicator is above the limit value in any year(s) in the next five years.	Significantly reduce the TACC and/or implement large-scale area/Zone closures until the egg production indicator is projected to be back above the threshold value with a 75% probability.