

# **Bass Strait Central Zone Scallop Fishery Resource Assessment Group (ScallopRAG) Meeting 36**

## **Meeting minutes**

**Teleconference**

**9 June 2020**

**11:04-14:00**

The Chair opened the meeting at 11.04 am

## Agenda item 1 Preliminaries

### 1.1 Welcome and apologise

Professor Brendan Kelaher, the Chair, welcomed members and observers to the meeting and made an Acknowledgement of Country statement recognising the Traditional Owners of the many lands in which we met and payed respect to Elders past, present and emerging.

Attendees	Membership
Brendan Kelaher	Chair
John Cull	Industry Member
Stuart Richey	Industry Member
Jayson Semmens	Scientific Member
Nic Marton	Scientific Member
Mervi Kangas	Scientific Member
Julian Morison	Economic Member
Daniel Corrie	AFMA Member
Heather Johnston	Executive Officer
Andrew Sullivan	Invited participant, Industry

### 1.2 Declarations of interest

ScallopRAG (the RAG) members followed the conflict of interest declarations as outlined in [Fisheries Administration Paper 12](#). Members and participants reviewed and updated the Declarations of Interest included at [Attachment A](#)

Jayson Semmens declared a potential conflict with [agenda item 4](#) 'Research Priorities'. Dr Semmens left the meeting while the RAG considered his interests and how they should be managed. The RAG decided he could be a part of the discussion, but should not participate when the RAG allocates priority rankings to research items for agenda item 4.

### 1.3 Adoption of agenda

AFMA confirmed that the discussion at agenda item 3 would be the time for members to raise any further proposed amendments to the Harvest Strategy review paper.

The agenda at [Attachment B](#) was adopted by the RAG as final.

### 1.4 Actions arising from previous meetings

The RAG noted the actions items from previous meetings and the updates provided by the Executive Officer at [Attachment C](#).

## Agenda item 3 – Harvest Strategy Review

AFMA introduced the agenda item and asked the RAG to consider and provide advice on proposed amendments to the current Bass Strait Central Zone Scallop Fishery (BSCZSF) Harvest Strategy (the current Harvest Strategy) as detailed in the discussion paper provided with meeting papers.

The RAG considered the background of the review of the current Harvest Strategy, noting:

- the [Commonwealth Fisheries Harvest Strategy Policy 2018](#) (HSP) and [Guidelines for the Implementation of the Commonwealth Fisheries Harvest Strategy Policy](#) (HSP Guidelines) were released in November 2018;
- all Commonwealth fisheries harvest strategies need to be revised within four years to ensure they meet the requirements of the HSP;
- the current Harvest Strategy was last reviewed comprehensively in 2014 in response to industry concerns about the cost effectiveness and flexibility of the 2012 Harvest Strategy;
- the management of the BSCZSF has changed significantly since the last review, with a better understanding of stock status from the annual biomass survey, and there is an increased need to include the economic performance of the fishery in the total allowable catch (TAC) setting process;
- AFMA intends to implement a revised Harvest Strategy that better reflects the current state of the fishery, can be scalable, and can respond to changes in biomass or economic factors influencing the fishery; and
- the changes proposed by AFMA are based on issues raised by industry and discussions at the RAG and the Scallop Management Advisory Committee (ScallopMAC) since the last review of the Harvest Strategy in 2014.

The RAG made the following key points with regards to the overall review of the Harvest Strategy:

- A thorough review of the current Harvest Strategy is needed, with a particular focus on being more adaptive to operational and environmental changes in the fishery, however the review process should not be rushed.
- The revised Harvest Strategy needs to consider the fishery as a whole and consider the different operations because there is only a limited number of vessels and processors remaining.
- There were a number of recommendations from the Fisheries Research and Development Corporation (FRDC) project 'Determining when and where to fish: Linking scallop spawning, settlement, size and condition to collaborative spatial harvest and industry in-season management strategies' which should be considered as part of the review.
- Separate harvest strategy approaches should be considered for eastern and western Bass Strait, noting the different biological characteristics of scallops at Flinders Island and King Island.

In providing its advice, the RAG focused on proposed amendments to the key components of the Harvest Strategy outlined in the review paper and the Economic data collection paper, a summary of which is provided below.

### Objectives

The RAG considered the review of objectives in the Harvest Strategy, noting:

- the HSP provides a framework for applying evidence-based, precautionary and transparent approach to implementing harvest strategies in Commonwealth fisheries;

- the objective of the HSP is the ecologically sustainable and profitable use of Australia's Commonwealth commercial fisheries resources (where ecologically sustainability takes priority) – through implementation of harvest strategies;
- the HSP defines biological and economic objectives for Commonwealth fisheries and identifies reference points against which the success of achieving objectives can be measured; and
- the HSP Guidelines provide guidance on the development of fishery-specific harvest strategies in Commonwealth-managed fisheries that meet the intent of the HSP.

The RAG made the following key points:

- Consistent with the HSP, an objective should be included in the revised Harvest Strategy related to rebuilding stocks in the event there is a severe decline in the stock biomass.
- Economic objectives should be carefully considered to ensure they are consistent with the requirements of the HSP and can be effectively implemented.
- Similar to the management of the WA scallop fishery a rebuilding strategy could be developed that would be implemented, if there is a severe decline in the stock.

### **Harvest Strategy Approach**

The RAG considered the proposed Harvest Strategy approach, noting:

- the current Harvest Strategy uses a step-up approach for exploitation, where a minimum specified amount of the known spawning biomass is preserved through a combination of bed closures and a TAC. This approach introduces management complexity, and the TAC setting process lacks the objectivity of a scalable set of decision rules to adjust the TAC when the biomass is high. This often leads to uncertainty over the optimal size of the Commercial scallop TAC to best support a profitable scallop industry;
- when considering the revised Harvest Strategy approach, it might be useful to consider the criteria against which third party certification schemes assess the effectiveness of a harvest strategy, such as the Marine Stewardship Council (MSC);
- given the dynamics of scallop beds and the spatial variation in recruitment across the BSCZSF, clear definitions of what constitutes a mature scallop bed (size/density/maturity) and when recruits are 'present' or 'absent' should be considered;
- the HSP Guidelines require that harvest strategies define reference points, which can be expressed as either a target reference point (TRP) – the desired state of the stock, or a limit reference point (LRP) – the point beyond which the risk to the stock is unacceptably high;
- the current Harvest Strategy does not include clear reference points to measure the performance of the fishery, or a defined set of Harvest Control Rules to adjust the level of fishing in response to changes in biomass;
- the 'virgin stock biomass' is not known for the BSCZSF, making it not possible to set LRP and TRP as a proportion of the virgin stock biomass;
- page 48 of the HSP Guidelines provides an example harvest strategy for a sedentary, single-species fishery which uses annual surveys to inform spatial management and TACs. This example applies a pre-defined set of scalable exploitation rates to the outputs of the survey to limit catch, through the TAC, to a proportion of the surveyed biomass;
- the [South Australian Pipi Fishery Harvest Strategy](#) (pages 85–94) uses a similar approach, and incorporates a Fishery Gross Margin (FGM) model, which uses representative economic data and biomass estimates to determine a TAC that maximises net economic returns to the fishery;

- The review paper includes a proposed approach to setting TAC levels and closure requirements under various known scallop biomass scenarios, including decision rules that take into account any economic or secondary biological performance indicators, which might be available;
- while the current Harvest Strategy allows for a Doughboy scallop TAC to be determined at different levels each year, they are not targeted and the default TAC of 100 t is typically applied; and
- the revised Harvest Strategy should consider introduction of a trigger (80 t for example), which would prompt a review of the status of the Doughboy scallops if targeted fishing were to commence, and allow for a TAC greater than 100 t to be set.

The RAG made the following key points:

- Noting the fishery is subject to rapid changes in biomass, consideration should be given to decision rules that promote stability in TACs.
- The proposed Harvest Strategy approach involves increasing the level of biomass to be included in closures in proportion to an increase in biomass. The logic of this seems to stem from a need to protect scallop density, which is important for synchronising spawning and potentially increase successful recruitment.
- Recruitment should be more explicitly defined and accounted for in the revised Harvest Strategy, particularly how it relates to risk and TAC setting.
- While the RAG generally supported the approach to setting TACs based on the surveyed biomass, the proposed ranges for biomass and corresponding TACs in are quite narrow, and relatively small changes in biomass would result in a revised TAC. It might be more appropriate to have a broader range of biomass measures (low/medium/high) to promote stability in TACs. Noting that more categories is considered better when calculating FGM.
- To promote stability, the previous season TAC could be used as the 'starting point' each year, and only changed if this addresses sustainability concerns or enhances economic benefits.
- The example decision rules use an FGM of 2.5 per cent as a threshold to change from one TAC level to the next. This may not be appropriate for the scallop fishery, and this should be given further consideration by the working group. This may depend on confidence in the economic data and any other uncertainties.
- Consideration will need to be given to how the Tasmanian and Victorian fisheries will impact management of the BSCZSF, including the levels of catch from these jurisdictions.

## **Biomass Survey**

The RAG considered the proposed biomass survey approach, noting:

- although not defined as objectives in the current Harvest Strategy, the intention of the biomass surveys is to provide annual biomass estimates to inform the TAC for Commercial scallops for a single year;
- under the revised Harvest Strategy, the objectives of the biomass survey should be broadened to develop a time series of biomass changes at some sites to improve the understanding of scallop stocks and bed dynamics;
- the current Harvest Strategy requires that an annual biomass survey be conducted for the TAC to be set above the default opening of 150 t;

- industry have requested that consideration be given to undertaking biomass surveys on a biennial basis to reduce costs;
- given the dynamic nature of the stock of Commercial scallops and the history of sudden decreases in biomass, the application of a multi-year TAC (MYTAC) approach would need to be based on the risk-catch-cost framework, with a clear set of decision rules for when a survey needs to be completed;
- a MYTAC approach might be appropriate when the stock biomass is high and stable and there are positive signs of recruitment. If the opposite is true, however, then an annual biomass survey would be required;
- the carriage of an observer for biomass surveys, as required under the current Harvest Strategy, can be reviewed in future iterations of the Harvest Strategy. This would require, however, industry having demonstrated their ability to collect the data;
- there may be opportunities under co-management agreements to coordinate aspects of the biomass survey – this approach is used in other Commonwealth fisheries and can reduce management costs;
- as the number of known commercially viable beds has increased in recent years, there is a need to prioritise which beds get surveyed due to time and resource constraint; and
- at its February 2020 meeting, the RAG provided advice on a series of principles to priorities survey beds – once finalised, these principles will be incorporated into the revised Harvest Strategy.

The RAG made the following key points:

- There is inherent precaution in the closure and TAC setting process because the biomass survey only surveys a known proportion of the fishery.
- Consideration should be given to broadening the scope of the survey, including the beds surveyed, to provide more information about the fishery – a random selection of some areas might be considered.
- The TAC is directly linked to the surveyed biomass, and there is a potential to influence the TAC by increasing or decreasing the size of the survey.
- While there are economic benefits to only running a biomass survey every second year, consideration should be given to the risk of losing data and weakening the time-series.
- Scallops are subject to sudden changes in biomass, which do not make them ideal candidates for MYTACs. If MYTACs are to be considered, there will need to be good feedback mechanisms and breakout rules based on robust data.
- There should be a clear set of decision rules in place to implement a biennial survey.

### **Default opening**

The RAG considered the proposed approach for default opening, noting:

- under the current Harvest Strategy, prior to the start of the fishing season each year, the Industry Co-Management Committee (the Committee) advise AFMA how to proceed with the opening of the season, to either:
  1. open the season with a default Total Allowable Catch (TAC) of 150 t and then decide if a biomass survey should be conducted (noting that the TAC cannot increase above 150 t unless a biomass survey is done); or
  2. keep the fishery closed (TAC set at zero tonnes) and undertake a biomass survey to determine biomass estimates using a 150 t research catch allowance.
- in recent years, with the estimated biomass being relatively high, industry have opted for a biomass survey as described under option (2) above. Under the revised Harvest

Strategy, it might be more appropriate to define the approach under scenario (2) as the default, and to redefine option (1) as a 'searching TAC' that is only used in low biomass scenarios.

The RAG supported redefining the default opening as per option (2) above.

### **Industry co-management committee**

The RAG supported reviewing the function of the Co-Management Committee, however suggested this is something the ScallopMAC should consider in more detail.

### **Economic data collection**

The RAG considered the approach to collecting economic data, noting:

- to support the development of analysis to estimate the fisheries Maximum Sustainable Yield (MEY) or a proxy for MEY as FGM, AFMA commissioned BDO EconSearch to prepare an economic data collection template for the BSCZSF;
- FGM would be tested at various TAC levels, based on outcomes of the biomass survey and harvest rates under the revised Harvest Strategy, to determine the TAC which is likely to maximise economic returns to the fishery;
- the revised Harvest Strategy would provide a mechanism to estimate the net economic returns for the whole fishery;
- some industry members have indicated that the data proposed to be collected is appropriate and it would not be onerous for industry to provide;
- some industry members have expressed their concern regarding the use of economic data in the TAC setting process, suggesting it will be used to lower the TAC and subsequently increase the lease price for quota, which will impact individual operators differently.
- the next step in incorporating economics into the TAC setting process will be to collect the economic data from industry, using the template, and then developing a model to calculate FGM.

The RAG made the following key points:

- Consideration would need to be given to what the starting point of the TAC should be – either the TAC from the previous season or a TAC based on the outcomes of the biomass survey.
- Businesses and operations differ greatly across the industry, and TACs may impact businesses differently. Consideration should be given to economic outliers and the impact that this may have on the fishery as a whole and how this may be addressed in the revised Harvest Strategy.

### **Recommendation**

The RAG recommended that AFMA establish a working group to consider feedback from the RAG and MAC with a view to providing a revised set of papers to the next RAG and MAC meetings. Specifically, the working group should consider the following:

- Defining what constitutes 'recruitment' or 'biomass' to inform decision rules and the TAC setting process.
- Consider a broader range of biomass reference points and associated TACs.
- Agreeing to thresholds of Fishery Gross Margin to move between different TACs.

- How to account for variability in efficiency or business models when running the FGM model.
- Outcomes of the FRDC project ‘Determining when and where to fish: Linking scallop spawning, settlement, size and condition to collaborative spatial harvest and industry in-season management strategies’.
- Clear decision rules for deciding when a biomass survey should be run biennially.

AFMA will consider representative membership for the working group and distribute a terms of reference to the RAG and MAC.

**Action item 1:** AFMA to establish membership for the Harvest Strategy review working group.

**Action item 2:** AFMA to distribute a terms of reference to the RAG and MAC for the Harvest Strategy review working group.

## Agenda item 2 – Principles for prioritising survey beds

AFMA introduced the agenda item, asking the RAG to consider and provide advice on the amended principles for prioritising survey beds under the annual biomass survey. An overview of the revised proposed principles is provided at [Attachment D](#).

The RAG noted the following:

- The revised draft principles were developed based on discussions with industry and at previous RAG meetings, and the first draft was present to the RAG at their February 2020 meeting;
- The revised draft principles were revised to capture the RAG’s key points and recommendations, and includes proposed principles to address some of the shortcomings of the first draft, including:
  - the number of beds that can be surveyed each year is limited, which is due largely to time and budget constraints;
  - the survey could be completed with less vessels, however, four vessels are currently used to allow for the pre-season scallop catch to be distributed to different processors;
  - it may not be necessary to survey the maximum number of beds each year, and this should be considered based on results of previous surveys and current economics of the fishery;
  - there is a need to be flexible when designating the regions to be surveyed each year to allow for expansion and recognising cost, resources and requirements of the survey;
  - surveying beds with juvenile scallops over multiple years can indicate the growth rate of that particular bed, but not for the whole of the Bass Strait area;
  - surveying some beds on alternating years was a practical way forward given the life span of scallops and the ability to monitor the cohorts on a 2 year basis;
  - the RAG requires a mechanism to decide when beds are not surveyed in the near future;
  - prioritising the beds each year allows for the most current knowledge to be used and allows for flexibility when planning the survey; and
  - the first draft of the principles did not provide a lot of guidance on either choosing between two similar beds; or deciding when a bed should be independently excluded from the survey.

The RAG made the following key points:

- The draft principles document reflects the current state of the fishery and may benefit from being more generalised.
- The relevance of the principles may change with the revision of the Harvest Strategy and will likely require the principles to be considered again.

AFMA will incorporate the suggest revisions and develop a finalised principles for prioritising survey beds document that will be used by the RAG when prioritising beds for the 2021 biomass survey.

## **Agenda item 4 – Research priorities**

AFMA introduced the agenda item and asked the RAG to provide advice on research priorities for the 2021-22 financial year to be included in the 2021-22 BSCZSF Annual Research Statement.

The RAG noted the following background on research priorities:

- Each year, the RAG are asked to provide advice on upcoming research needs for the fishery.
- This is required in the context of the [BSCZSF Five Year Strategic Research Plan 2016-20](#).
- As a part of this process, the RAG are asked to prepare an Annual Research Statement and complete a research Gap ID form for each new priority.
- The Annual Research Statement includes consideration of the cost-effectiveness, priority and timeframes for achieving identified priorities.

The RAG noted the following update on research priorities in the BSCZSF:

### 2020 Annual biomass survey

The 2020 biomass survey was cancelled due to the logistical and work health and safety issues arising from the Covid-19 pandemic. A biomass survey is currently scheduled for 2021 and the current contract extends to July 2022.

### MEY project to inform the harvest strategy/TAC setting process

The AFMA Research Committee (ARC) approved an application from Fishwell Consulting to coordinate a project to collect economic information and analyse this to estimate the Maximum Economic Yield (MEY) for the fishery. This project will follow on from the work currently underway by Dr Julian Morison, with a view to implement a Fishery Gross Margin (FGM) model in the revised Harvest Strategy.

### Development of ageing techniques for Bass Strait scallops.

This project was prioritised as medium in the 2020–21 BSCZSF Research Plan and was not supported by the ARC for funding in 2020–21.

### Impact of seismic surveys on scallop larvae

This project is on the ComRACs list of research priorities however FRDC are waiting on the outcome of FRDC Project 'Oil and Gas: National coordination - seismic and other issues (2017–186)'. This project may result in further recommendations in relation to the impacts of oil and gas exploration on commercial fish stocks, including whether any further research required.

### Optimising the end of season date

This project was not supported by the ARC for funding in 2020–21.

This research priority is separate to the proposal submitted to the Bass Strait Scallop Industry Association (BSSIA) that was submitted to FRDC for funding to develop an industry-led, adaptive and science-based approach to managing the season closure.

The RAG provided the following advice on research priorities for the 2021–22 financial year:

- The 'Optimising the end of season date' project should be put on hold until there is further interest from industry to pursue this.
- A scoping study should be put forward for ARC consideration to 'better understand if recruitment is under estimated in the biomass survey – establishing a method for estimating recruitment'

The RAG will be asked to provide recommendations on research priorities out of session.

**Action item 3:** AFMA to draft Gap ID form for research priorities identified, which they will provide to the RAG out of session.

**Action item 4:** AFMA to contact ComRAC to request an update on FRDC project 2017-186 and to establish whether linkages exist between that project and the existing research priority 'Impact of seismic surveys on scallop larvae'.

**Action item 5:** AFMA contact ComRAC to request an update on the FRDC priority 'Wider investigation of the use of video survey techniques to determine scallop abundance in both inshore and closed areas'.

## **Agenda item 5 – Other Business**

The RAG noted the current draft consultation schedule to open the BSCZSF fishery for the 2021 fishing season at [Attachment E](#)

Scientific member, Nic Marton, informed the RAG that he would be resigning from the RAG as he has accepted a new job, with ScallopRAG 36 being his last meeting.

The Chair, the RAG and AFMA thanked Nic for his wonderful contribution over the years and wished him all the best in his new role. Nic has been a valuable member of the RAG over the last eight years The RAG has enjoyed having him as a member and his experience has been invaluable.

## **Close of meeting**

The Chair thanked the RAG and invited participants for their contributions throughout the meetings this year especially due to the challenges arising from the COVID-19 pandemic and having to have all of the meeting virtually. The RAG wished industry all the best in the fishing season.

The meeting was closed at 2.00 pm.

## Attachment A- register of interest

Name	Membership	Declared interests
Brendan Kelaher	Chair	No interest in the fishery pecuniary or otherwise.
Nic Marton	Scientific	ABARES employee. Organisation is known to submit research funding application for consideration by ScallopRAG
Jayson Semmens	Scientific	Scallop Research Group Leader, Institute for Marine and Antarctic Studies. Organisation is known to submit research funding applications for consideration by ScallopRAG
Stuart Richey	Industry	Holds Commonwealth and State concessions.
John Cull	Industry	Holds Commonwealth and State concessions.
Mervi Kangas	Scientific	Department of Primary Industries and Regional Development, WA employee. No interest in the fishery pecuniary or otherwise.
Julian Morison	Economic	Director, Kuti Co Pty Ltd – SA Pipi quota holder, Director, BDO Advisory (SA) Pty Ltd - current contracts with SA & Qld state governments collecting fisheries economic data, providing economic advice; Member, SA Snapper Management Advisory Committee (PIRSA), Economics member, Shark Resource Assessment Group (AFMA), Member, Economics Working Group (AFMA), Member, Human Dimensions Research subprogram Steering Committee (FRDC), Principal & coinvestigator on several FRDC research projects
Dan Corrie	AFMA member	AFMA employee. No interest in the fishery pecuniary or otherwise.
Heather Johnston	Executive Officer	AFMA employee. No interest in the fishery pecuniary or otherwise.
Andrew Sullivan	Invited Participant, Industry	Executive Officer, Bass Strait Scallop Industry Association

## Attachment B



Australian Government

Australian Fisheries Management Authority

## Meeting 36 – 9 June 2020

### Agenda

Time (EDT): 11.00-14.00

Approximate time	Item
11.00	<b>Agenda item 1. Preliminaries</b> 1.1 Welcome and apologies 1.2 Declaration of interests 1.3 Adoption of agenda 1.4 Actions arising from previous meetings
11.30	<b>Agenda item 3. Harvest Strategy Review</b> <i>ScallopRAG to consider and provide advice on proposed amendments to the Bass Strait Central Zone Scallop Fishery Harvest Strategy</i>
12.45	<b>Agenda item 2. Principles for prioritising survey beds</b> <i>ScallopRAG to provide advice on revised principles document to assist in the prioritisation of beds to include in the biomass survey</i>
13.00	<b>Agenda item 4. Research priorities</b> <i>ScallopRAG to identify research priorities for funding in 2021-22</i>
13.45	<b>Agenda item 5. Other Business</b> <i>Meeting Schedule for 2021 (for noting)</i>
14.00	Close

## Attachment C- Status of actions

### Previous action items

RAG meeting #	Agenda Item	Action item #	Action Item	Agency/ person	Timeframe	Progress
32	10	4	AFMA to prepare a discussion paper regarding the harvest strategy review for consideration by the RAG at its June 2020 meeting.	AFMA	June meeting	<b>Closed.</b> To be considered at Agenda Item 3
33	5	1	AFMA to re-draft the principles of prioritising survey beds document to capture the key discussion points	AFMA	June meeting	<b>Closed.</b> To be considered at Agenda Item 2
33	6	2	AFMA to write to operators to remind them to complete logbook information regarding size and tonnage of discarded scallops.	AFMA	Start of 2020 season	Will be included in pre-season letter
33	6	4	AFMA to include an additional principle for prioritising surveyed beds based on recruitment, proximity of commercial fishing and biomass in the prioritisation principles document.	AFMA	June meeting	<b>Closed.</b> To be considered at Agenda Item 2

### New action items

RAG meeting #	Agenda Item	Action item #	Action Item	Agency/ person	Timeframe
36	2	1	AFMA to establish membership for the Harvest Strategy review working group	AFMA	Prior to scallopRAG 37
36	2	2	AFMA to distribute a terms of reference to the RAG and MAC for the Harvest Strategy review working group	AFMA	Prior to ScallopRAG 37
36	6	3	AFMA to draft Gap ID form for research priority identified and provide to the RAG out of session	AFMA	August 2020
36	6	4	AFMA to contact ComRAC to receive an update on FRDC project 2017-186 and establish the linkage of that project to the 'Impact of seismic surveys on scallop larvae'	AFMA	August 2020
36	6	5	AFMA contact ComRAG to receive an updated on the FRDC priority 'Wider investigation of the use of video survey techniques to determine scallop abundance in both inshore and closed areas'	AFMA	August 2020

## **Attachment D- Principles for prioritising scallop beds for survey**

1. A maximum of 12 beds can be fully surveyed in the annual biomass survey
2. Where possible, the annual biomass survey will include beds that represent the spatial extent of the fishery.
3. Beds should be prioritised, with the lowest priority beds to be replaced by exploratory marks if they are identified as being viable to be fully surveyed
4. If an exploratory mark does not yield scallop beds considered worthwhile surveying, the survey schedule will continue as planned.
5. If a bed of juvenile scallops is identified, and the benefit of sampling the area outweighs the potential cost of mortality, conduct a small survey of the area with a minimal number of shots to obtain length frequencies
6. Beds that are considered to have a good time series and are currently fished will be surveyed annually based on age, tonnage and density of the bed from previous surveys and its capacity to contribute to closure arrangements under the Harvest Strategy for the upcoming season
7. Beds that are considered to have a good time series but aren't currently fished may be surveyed on alternating years based on the age, tonnage and density of the bed from previous surveys and its capacity to contribute to the closure arrangements under the Harvest Strategy for the upcoming season if there new beds of a higher priority to be surveyed.
8. Where two or more scallop beds with similar characteristics need to be prioritised, consideration should be given to signs of recruitment, proximity to recent commercial fishing, and the estimated biomass of the beds when they were most recent surveyed.

## Attachment E- Draft consultation schedule to open the BSCZSF for the 2021 fishing season

Proposed Date	Meeting/event/process	Purpose
November 2020	Co-management committee	Co-management Committee to advise AFMA how to proceed with the 2021 season: <ol style="list-style-type: none"> <li>1. open with 150 tonnes on 1 April 2021, or</li> <li>2. proceed directly to biomass survey</li> </ol>
<b>If proceed directly to biomass survey, the following schedule would apply</b>		
February 2021	Co-management committee (teleconference)	Provide input into the survey areas for 2021 to be considered by ScallopRAG.
February 2021	ScallopRAG (teleconference)	Recommend survey areas and Research Catch Allowance (RCA) for 2021 survey.
March 2021	Survey EOI (letter)	Call to all concession holders and active fishers for Expressions of Interest to participate in 2021 survey.
March 2021	Vessel/s selection (teleconference)	Survey vessel selected by an independent panel.
1 May 2021	Survey start	Survey start
June 2021	ScallopRAG (in person)	RAG meeting to provide TAC and closure advice, set research priorities for 2022-23
June 2021	ScallopMAC (in person)	MAC meeting to provide TAC and closure advice to the AFMA commission, set research priorities for 2022-23.
TBC	Commission decision (out of session)	Consider RAG and MAC advice and set TAC
TBC	Fishery opened or closed.	