

Minutes

Rock Lobster And Giant Crab Resource Assessment Group

Topic:	Meeting# 29
Date:	22 October 2020 - 09:30am – 12:00pm
Chair:	Ian Knuckey
Attendees:	Lawrence Moore (VRFish), Dallas D'Silva (VFA), Mike Burgess (VRFish), Toby Jeavons (VFA), Klaas Hartmann (IMAS), Gary Ryan (Western Zone industry member), Wayne Dredge (Eastern Zone industry member), Ross Bromley (Eastern Zone industry member), Johnathon Davey (SIV), Markus Nolle (Western Zone industry member), Rohan Henry (Bunurong Land Council Aboriginal Land Corporation), Rafael Leon (IMAS), David Reilly (VFA), Peter Galvin (Scuba Divers Federation Victoria)
Apologies:	Caleb Gardner (IMAS), Russel Frost (Western Zone industry member), Mark Psychers (Eastern Zone industry member), Anthony Olver (Giant Crab industry member),

1. Preliminaries

1.1 Welcome and apologies

Ian Knuckey, as Chair, stated an Acknowledgement of Country and welcomed members to the 29th meeting of the Victorian Rock Lobster and Giant Crab Resource Assessment Group (RLRAG). Ian acknowledged the apologies and provided guidance on protocols for undertaking an online meeting.

Ian welcomed Peter Galvin to the RLRAG. Peter introduced himself to the group and noted that Scuba Divers Federation Victoria represent 9 dive clubs. RLRAG members introduced themselves to Peter and declared any conflict of interest. Ian Knuckey declared potential conflict of interest with e-logbooks.

1.2 Overview of meeting and adoption of Agenda

The agenda was adopted with no changes.

1.3 Minutes and actions from last meeting

Ian noted that a final copy of the minutes of the last meeting had been circulated via email. As a matter of process, the RLRAG endorsed the minutes to record that they are a true and accurate reflection of the meeting.

Progress against the outstanding actions were summarised as follows:

- Circulate compliance stats from Season 1 of tagging program – Completed by Toby;
- Circulate Management Plan Actions update – Completed by Toby;
- Update on paper-based reporting/electronic reporting comparison – Underway by Dave. 12 fishers continuing with paper based reporting to compare against electronic reporting platform. Continuing to work through this analysis and formatting data to be compatible with existing data base;
- Puerulus Monitoring Program review – Review of alternative collection methods, explore engaging other sectors to be part of the monitoring program and expand to other locations and report on feasibility of maintaining Port Campbell site in the short term. To be covered under Agenda item 3;
- Modelling – Klaas to provide update on WRL model development in Agenda Item 7.2;
- CPUE analysis – Consider analysis between adopters of technology over time against fishers that have not adopted technology. This will be undertaken as component of Harvest strategy review;

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- Data collection – Toby and David to consider data collection requirements that are mandated/overlap with voluntary data collection program and be presented at the next RRLAG – This item is underway and will be informed by initial comparison of logbook data and electronic reporting data;
- Giant Crab – Outstanding actions to be covered in Agenda item 6;
- Review growth estimates of larger lobster in the Eastern Zone – To be addressed in agenda item 4;

The following actions remained outstanding:

- Undertake a review of industry code of practice – Markus Nolle;
- Harvest Strategy Review – Review of key components to be undertaken during review of Management Plan;
- Egg production – Klaas to run both methodologies for calculating model estimated egg production for 2019/20 assessment;
- Modelling – Klaas to run both models simultaneously for 2019/20 stock assessment, decision to be made on which model to adopt going forward following completion of WRL model in 2020;
- CPUE analysis – Klaas to present calculations of CPUE by weight and CPUE by numbers for consideration at the stock assessment RRLAG;
- Biotoxin Management – Markus to take DRAFT Biotoxin Management Plan to SRL and also project proposal around traceability and provenance;
- Model different levels of PRI and likelihood of breaching reference point – Klaas Hartmann;
- Strategic plan for future tag recapture program – Klaas Hartmann;
- Indigenous participation – Toby has followed up discussions with Rohan and Mike Gilby around project scope for 2020 to engage indigenous sector in telling the story of Southern Rock Lobster. Toby is awaiting internal clarification of funding source to engage with the sector;
- Increase to LML in the Eastern Zone to be considered with respect to spatial and price components with MEY development;
- Recreational tagging App enhancement including recreational 'relative undersize abundance' measure – Toby;
- Research projects – Klaas to update on progress of Katie Creswell study looking into impact of South Easterly weather patterns on productivity in Victoria. Klaas to update on research project investigating impact of larger lobster keeping smaller lobster from pots;
- SRL – Markus to raise the MEZO project, biotoxin monitoring, whale entanglement and Aqwi-S at the upcoming SRL meeting;

All other actions arising from Meeting 28 are outlined in the attached 'Actions List' circulated with the meeting minutes.

2. Management update

2.1 Recreational tagging program update

- A steering committee consisting of VFA Management/Education and Enforcement, VRFish and recreational fishers affiliated with dive clubs has been established and has now met on 5 occasions. The steering committee is working together to provide advice and recommendation to the VFA on shaping the future direction of the rock lobster tagging program
- The work undertaken by the steering committee continues to be simultaneously guided by the IMAS independent review. The review consists of a report identifying areas for improvement, an initial phone survey to gain feedback of participants and an angler diary catch comparison for the upcoming summer period.

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- Key timelines for review of the program and implementation of enhancements is as follows:
 - August/September 2020 – Develop list of App future functions/enhancements;
 - September – December 2020– Review and refine Management Arrangements;
 - January 2021 – Commence tech discovery/planning sessions;
 - Feb/March 2021 – Development of new App features;
 - May 2021 – Testing of new App;
 - June 2021 - Transition Management Arrangements from FN to Regs;
 - 1 July 2021 – Launch new App;
 - 15 September 2021 – Transition to new App;
- A list of future scope requirements has been compiled and will now form the basis of an RFQ to be released through our e-services portal. The enhancements included in the future scope are as follows:
 - Integration with Go Fish Vic
 - Removal of plastic tags
 - Requirement to register intent to be active for a season
 - Introduce concept of a digital tag – Reporting time frame under discussion
 - Provide capability to capture 'zero catch days'
 - Develop an 'abundance index'
 - Provides incentives for citizen science 'opt-in' option
 - Provide off-line reporting capability
 - Consider integration with weather Apps
 - Improve compliance App to allow ability for FO's to add details of inspection which can be cross referenced in admin system with records entered by fishers

Ross questioned if there are plans to extend the approach to other species. Toby explained that the 'Go Fish Vic' App provides the ability to report other species. The unique aspect of the RL Tagging program is the mandatory requirement to report catch. Abalone potentially may be the next fishery to formalise reporting of recreational catch.

2.2 Management Plan review

- Toby advised that progress has been made on internal sign off for completion of Management Plan review and is expected to kick-off shortly and be completed by June 2022. A brief has been sent to the CEO seeking approval to establish a steering committee to undertake the review.

3. Monitoring program – Puerulus collection program update

- Dave provided an update on the puerulus monitoring program following the review presented at the previous RLRAG ;
- Apollo Bay site is being maintained, Port Campbell site has been discontinued as this was determined to not be feasible even in the short term, and the similarities between the two sites gave more confidence in decommissioning Port Campbell;
- Gary Ryan questioned if the Port Campbell site is suspended or discontinued. Dave clarified that this site will not be continued and will work with Parks Vic to remove gear;
- Dave has continued to pursue engaging other sectors to become involved in monitoring and trial of alternative collection methods;

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- Markus organised a Zoom meeting with SOLN who have expressed interest in getting involved with marine projects. Looking to set this group of with gear and give them direction to undertaken monitoring on a monthly basis;
- Alternative collection methods (non-dive based) are being explored. Floating pontoons in Apollo Bay harbour provide opportunity to hang the 'oyster basket' design used in Tasmania for puerulus monitoring. Different mesh sizes are available and consideration to be given to retaining puerulus when retrieving;
- Next step is to undertake trial in the Apollo Bay harbour with VFA contribution in supplying equipment (under \$1k) and train SOLN to run monthly servicing. If this system works then we can look to phase out old collectors and expand approach to other locations;
- Phase in period will provide comparison between collection methods;
- Markus noted this project has been received very well in Apollo Bay and aligns with big development plans in the Apollo Bay harbour. Future vision includes a maritime hub. SOLN are setting up an 'ocean branch' of their work and is a great opportunity to link in with this new direction;
- Mike noted the low numbers of puerulus with existing collection method and the new gear potentially can increase the numbers of puerulus collected to strengthen the ability to recognise trends. More confidence and cleared trends may provide ability to link in to stock assessment;
- Ross noted support for the approach and for the VFA to consider how this may be rolled out to other areas to expand representation across the Victorian coast;
- The RLRAG endorsed the approach for progressing

4. Eastern Zone large lobster growth rate review

- Historically higher numbers of recaptured animals and seeing declining trend in the last 20 years;
- Most of tagged lobster are below the legal size. Therefore, the length frequency data from recaptures is heavily truncated below the legal size limit. Less of an issue for larger females due to the female closed period and release of larger tagged animals;
- Growth diminishes significantly at 125 to 130mm for females. More information available at larger sizes for males as they continue to grow where females put energy into reproduction;
- There is a high proportion of animals up to 150mm in reasonable abundance in recent years in fixed site survey information. This is a mismatch with recapture data suggesting minimal growth (and hence low abundance) above 130mm;
- The understanding of growth in stock assessment model is important in understanding productivity;
- New models have recently been fitted comparing length as a function of age and suggests that growth should not continue above 130mm. The issues identified is that the length frequency data from fixed site surveys shows higher abundance of large animals and new model appears to underestimate the growth of animals;
- The approach used in the old growth model in current stock assessment model has not been clearly documented;
- Klaas is currently extending the growth model further to utilise presence of larger lobster;
- In rolling out the Australian Lobster Model the original growth model function and new growth model function will both be tested;
- Markus – Can the problem be solved by including 'uncertainty'. Klaas responded that the model that is under progress is a Bayesian model that takes uncertainty into account however is only fitted to growth increment data which strongly suggests that females do not grow beyond 130mm. This is contrary to what we are seeing with length frequency data. This potentially introduced bias' that are not reflective of what is occurring;
- Klaas will continue to progress work relating to better understanding growth rates of larger lobster and investigate the mismatch between the model and presence of larger animals in LF data'
- Ian – Does industry catch and return larger lobster when fishing to a particular size grade?

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- Wayne – Throwing back larger bulls during summer has been considered however not during the recent period of low catch rates;
- Gary – There is very little discard in the Western Zone. Report of recapture also needs to be improved. David noted that Russel Frost had approximately 25% recapture. Wayne, Matt Harry and Simon Hocking are also now releasing more tags in the Eastern Zone;
- Toby – Could tagging of dismembered lobster improve tagging rates? Gary noted that there is potential with discards however reporting of tagged lobster needs to be improved;
- Markus – Can we age lobster yet? Klaas noted this is the holy grail and has not yet been achieved with studies providing inconclusive results. There is some DNA work looking at aging lobster but is still not developed. If a reliable aging technique is available it will change the way we do things;
- Markus – Allocation of research quota to be considered as incentive for fishers to be involved in review of Management Plan.

5. CPUE adjustments arising from COVID and Quota Rollover

- Klaas provided an overview of how the harvest strategy functions with respect to annual changes in CPUE. Klaas also noted the time lag in setting the TACC based off the previous fishing period. The next TACC decision will be based on the current TACC and catch rate/PRI from 2019/20 fishing season;
- Shifting catch and quota rollover arising from COVID has the potential to impact the assessment process;
- The catch rate for 2019/20 season may be inflated due to less catch arising from COVID and needs to be carefully considered;
- Klaas noted that if less catch occurs during a fishing season compared to normal, then you deplete the resource less, so that by end of season there are more fish on the bottom, therefore expect catch rate to be higher. Changes in catch by month and operator are corrected for during standardisation process;
- Market forces (high grading) may impact catch rate and needs to be considered ;
- Wayne – Market forces did not impact fishing due to very low catch rates and low prices
- Klaas outlined further challenges for future assessments arising from potential uncertainty in determining the current TACC;
- The PRI in the Western Zone has been driving the TACC setting process and is expected to continue to do so, therefore may not have a significant impact on TACC setting process;
- The catch rate in the Eastern Zone has been much more of a driving factor however the proportion of TACC caught only differed by 3% which is much less than may have been the case. Although the catch rate is calculated on fishing season not quota season and therefore requires further analysis
- If the adjustments are a great concern, we could include projections from the assessment model to use another piece of information in TACC setting (rather than just evaluating against reference points in Harvest Strategy);
- If notable amount of catch has shifted between seasons, this approach would be recommended;
- Ian summarised discussion that we are aware of a number of potential impacts on indicators. These impacts have not yet been confirmed, and if there are confirmed large changes then potentially will need to compensate by incorporating additional information including projections from stock assessment model;
- David clarified that the date assessment period is November through to September. Using the fishing season allows a few more months of data to be available

6. Giant Crab

6.1 Harvest Strategy development

Tiered Harvest Strategy approach

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Klaas presented a Tiered Harvest Strategy approach seeking RLRAG endorsement.

- Level 1 details to include mandatory LF sampling;
- Level 2 details includes additional verification of logbook data;
- Level 3 includes depth stratified survey (annual);
- Level 4 requires several years of depth stratified survey and an assessment model carried out;
- An example of depth stratified survey occurs in the WA deep sea crab fishery where a survey is conducted at identified location, time of year, soak time and gear type and pots set at determined depths with identified GPS coordinates. Several years required to get maximum value of data set;
- Markus – Level 1 and 2 to be switched around? This requires on-board observe at base level. Potentially level 1 and 2 could be merged;
- Ross noted the discussion requires more input from fisher in providing recommendation of details in table;
- Ian noted that investing in further research does not necessarily result in further increase in profitability of the fishery;
- Gary – Interested to see bycatch from Trawlers in Commonwealth and how this has changed;
- Justin – The change to profit is relative to the cost of implementing specific research requirements. Ian noted that it is difficult to separate;
- Agreement from all to review wording of 'change to profit' line and refine conditions under level 1 and level 2;
- Ian noted that Natalie Dowling from CSIRO has done a lot of work in data poor fisheries and implementing tiered Harvest Strategy approaches;

Catch rate standardisation

- Current filters applied to data include – Must catch more than 1000kg, must have more than 300 entries and record that fisher was targeting GC or Both;
- The need to consider spatial change in fishery was expressed at previous RLRAG;
- From 2010 onwards catch has been focused on areas 10 – 14;
- If data is restricted to just areas 10-14, is this representative and how much data does this leave you with?
- Klaas presented image of change in catch by area through time and the change in fisher numbers by area through time;
- A comparison of indices that included spatially restricted data demonstrated that the index does not change very much when restricting data to areas 10 – 14;

Standardisation

- Current approach assumes 38% increase in catch with each additional day of soak up to 4 days, No correction to fisher/time of year etc;
- Post quota – Increase in soak time has been identified for consideration;
- Klaas presented three different approaches addressing soak time;
- The more complicated of these approaches gave similar results in comparison to the least complex linear approach
- Klaas noted that when a fisher is included in the standardisation process it does impact the peak catch rate and has implications for setting reference points;
- Next steps – Review historical corrections in data, identify best standardisation approach and determine most appropriate reference periods and levels;
- Klaas noted that he is discussing with Malcolm Haddon and he will join future discussion;
- Further progress to be provided to the RLRAG out of session

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6.2 FRDC Giant Crab project update

The giant crab project will look to enhance data collection in the giant crab fishery through utilising new technologies such as photo recognition and machine learning. The FRDC recently advised that the project had been approved subject to satisfying a number of conditions. A full application has been submitted this week and all conditions addressed. Awaiting review and further notification from the FRDC.

7. Other business

7.1 SRL update

SRL had its AGM a few weeks back. The new FRDC strategic plan for R&D has been released. The new strategy will create more opportunity in what can be funded and what dollars can be leveraged. New project around DNA fingerprinting for rock lobster undertaken by a group called Source Certain. Project application for RL under development looking to undertake a pilot in Victoria to evaluate application of the technology and ability to create discerningly different fingerprint of lobster from different locations. If successful, this could be expanded with many benefits to industry.

SIV is in the process of putting together framework to establish a rock lobster sub-committee of SIV which will look to act as an industry Management Advisory Committee. Will redirect \$100k from origin funding to address other initiatives such as updating the industry code of practice.

7.2 WRL model development update

Klaas now has the first version of the Australian Rock Lobster model. The next step is to compare with actual data and compare with existing stock assessment models.

7.3 Trello

Toby sought interest from the group in trialling a Trello board. The group endorsed a trial and Toby will look to send out DRAFT meeting minutes via the online platform.

Reminder that the next meeting date is 23 February 2021.

Meeting concluded: 12:30pm.

<Actions>

- Toby to schedule next meeting
- Toby to setup Trello board for the group