



## **Abalone Council Australia Ltd**

**262 Argyle Street, Hobart,**

**Tasmania, Australia, 7000**

**Phone; +61 3 62 311 955**

**Fax; +61 3 62 311 966**

**Email: deanlisson@tassie.net.au**

**melinda.mullen@abalonecouncil.com.au**

**Mobile: + 61 419 599 954 (Dean Lisson)**

**+ 61 408 365 783 (Melinda Mullen)**

**Web: www.abalonecouncil.com.au**

### **Progress report for ACA/CRC projects; 31<sup>st</sup> January 2012**

This is an updated progress summary (as of 31 January 2012) of the major projects currently within the ACA/CRC Abalone project portfolio:

**The update comments are highlighted in blue lettering;**

#### **CRC Communal Projects;**

1. *Seafood Market Intelligence* – the outcome of this project is to publish reports describing export market dynamics of seafood and providing Seafood CRC participants with new market opportunities: – during 2010 there were two abalone related projects – both conducted by Dr Joanne Freeman from the University of the Sunshine Coast – the first was focussed on the abalone market in Shanghai (April 2010) and the second was focussed on the abalone market in Beijing (September 2010). Ben Manning provided a presentation at the 5<sup>th</sup> National Abalone Convention on Hamilton Island from 21<sup>st</sup> to 23<sup>rd</sup> of July 2011 that encompassed the main research learning's/findings from the two USC reports (Shanghai & Beijing). The reports have supplemented and verified market based findings during the China Market project (2009/723).

2. *Seafood Access Forum (SAF) and Seafood Trade Expert Panel (STEP)* – this project is all about ensuring that Seafood CRC participants have well analysed positions available to support trade and market access negotiations – i.e. to ensure favourable outcomes from current and future international trade negotiations including WTO and FTA's: - the SAF and STEP have both been established with the SAF secretariat being operated by Seafood Services Australia. STEP is now called SafeFish and has established productive working relationships with the Australian Quarantine and inspection Service (AQIS) and with Food Safety Australia and New Zealand (FSZANZ). Input into the SAF and SafeFish is through the SAF forum conducted by SSA every 6 months. The recent EU market reopening tactics were developed and implemented (based on technical information from ACA project 2008/909) resulting in the reopening of EU market access and importantly providing a degree of protection against the China market implementing similar requirements. Future ease of access to markets will be aided by the completion of a follow on project (from 2008/909) being led by Dr Cath McLeod (from SARDI) –entitled “Marine bio-toxins and Market Access for Abalone” (2010/737).

SAFEFISH has proven itself to be relevant to the market access needs of the Abalone industry due to the management assistance provided in the wake of a toxic algal bloom in south east Tasmania – there was a “super-bloom” of *Gymnodinium Catenatum* in the Huon Estuary late in 2010 which lasted until May 2011. The bloom spread south into the d'Entrecasteau Channel, Recherche Bay and Cloudy Bay Lagoon. Abalone tested within the Channel in May 2011 (under ACA/CRC project 2010/737 – see below comments) were found to contain paralytic shellfish toxins (PST's) at levels above international standards for human consumption. These results have led to the temporary suspension by AQIS of live exports of abalone from some abalone fishing areas. These fishing areas are being progressively re-opened as the PST's are metabolized (depurated) within the viscera and foot tissues. This toxin event may also have wider implications for the industry in terms of management of marine bio-toxins going forward. AQIS, Abalone Council Australia and the ASCRC have requested additional technical advice to assist in the risk management of this notification and to help in determining appropriate management arrangements in the future. An Expert Consultation Group meeting was convened on June 30 2011 by SafeFish to identify key knowledge gaps and potential avenues of work that may assist risk managers and the industry. The advice from this meeting is likely to be used to draft an FRDC (TRF) application focusing on developing appropriate management arrangements in the future.

A Seafood Trade Access Forum submission has been forwarded on behalf of the abalone industry to SAFEFISH and SAF for their consideration (late Jan 2012). This SAF application will support a Tactical Response Fund application (FRDC) to carry out the research detailed below. As mentioned above, an Expert Consultation Group (ECG) was convened by SafeFish in July 2011 to identify key knowledge gaps and potential avenues of work that may assist risk managers. The ECG included representatives of

AQIS, the Tasmanian Department of Health, UTAS, SIMS, Cawthron Institute and SARDI. The ECG highly recommended that the suggested technical work be undertaken and that it was both feasible and achievable.

Currently the SAF have included 'marine bio-toxins in abalone' as an issue for China (priority level 10) and for the EU (priority level 9). The bio-toxin event in south-east Tasmania in 2011 has significant ongoing risk management repercussions for the Australian abalone industry. It is possible that this event could disrupt trade access into markets in the future and that border scrutiny could be increased. There have been no reported or recorded cases of sickness or death due to consumption of abalone containing PST's. It is likely therefore that there is negligible risk of this ever occurring however regulators adopting the precautionary approach may seek to impose unreasonable or unwarranted trade access restrictions in the future. For this reason the abalone industry seeks to adopt a pre-emptive defensive position underpinned by the necessary science and research. Additional technical work is required (as detailed below) to support the industry and regulators to manage these issues.

It is recommended that the SAF Executive:

1. Support the strategies and actions proposed;
2. List this issue in the 'Australia' section of the 'trade issues' list; and
3. That this issue be elevated to a higher priority within the SAF forum
4. That SAFEFISH be charged with oversight of this project and
5. That SAFEFISH be responsible for co-ordinating peer review by external experts

Recently paralytic shellfish toxins (PSTs) were detected at levels exceeding the maximum permissible level in wild abalone sourced from several fishing zones (from abalone sub blocks 13E, 13D, 14A, 14B, 14C, 14D, 14E, 15 & 16) off the south east coast of Tasmania. This discovery resulted in the suspension of live exports of abalone from these areas. Most zones are now open for live export, however several zones are still affected some 8 months later.

This event has been a major disruption to the Tasmanian abalone industry during 2011 and has cost exporters tens of thousands and possibly hundreds of thousands of dollars each in lost revenue due to export restrictions imposed by AQIS in order to comply with international toxin guidelines. These restrictions have been imposed even though there is no evidence (anywhere in the world) of any sickness or death caused by ingestion of PST affected abalone tissue.

This unfortunate event may have wider implications for the whole Australian abalone industry in terms of management of marine bio-toxins going forward and potential domestic and trading partner requirements for continued market access.

AQIS and Abalone Council Australia Ltd have requested specific additional technical information to fill key knowledge gaps and to assist in developing appropriate risk management strategies for abalone. This new information is needed to maximise the volumes of abalone that are able to be harvested and to support ongoing market access.

The desired FRDC TRF project outcomes are as follows:

- Prove that the doSTX toxin does not present a human health risk at levels found in abalones harvested from areas subject to toxic algal blooms
- Obtain necessary technical advice to fill key knowledge gaps and to support ongoing industry market access.
- Unimpeded access into key markets for abalone e.g. Hong Kong, China, Singapore, Taiwan.

The impacts and potential benefits of the project are as follows:

- In May 2011 wild abalone sourced from several abalone fishing zones (13E, 13D, 14A, 14B, 14C, 14D, 14E, 15 & 16) off the south east coast of Tasmania were found to contain levels of PSTs above the maximum permissible limit.
- The immediate effect of this event was that the export of live abalone ceased from most of the affected areas for several months, however several areas are still not eligible for live export some 8 months later.
- This has impacted approximately 90 abalone divers, who were subjected to significant restrictions in their fishing activity between May and November 2011.
- A dozen or more Tasmanian exporters/processors specialising in live abalone exports had between 5 and approximately 30 tonne of live abalone each in tanks when the AQIS restrictions were first imposed. Live abalone harvested from the affected fishing zones were unable to be exported at the time – subsequently these abalones had to be used for lower value processed product (canned, frozen or vac pack).

- Ongoing export restrictions from May to November 2011 impacted negatively on abalone quota holder incomes as they were forced to accept lower beach prices due to the fact that processors had to sell product from the affected fishing zones at a lower value into the processed (product) market. The cumulative loss to the Tasmanian industry is difficult to estimate but could be up to a \$1 million or more over the 7 month period that the restrictions applied.
- In order to re-open the zones for live export a significant amount of bio-toxin testing was undertaken by the Tasmanian Abalone Council. This had an immediate direct cost to industry of \$38 000.
- Additional monitoring and testing costs will be incurred annually as the algal bloom events occur each year.

The actions required to achieve the desired outcomes are as follows:

- Critical knowledge gaps (as detailed below) exist that mean that harvesting areas in Tasmania which are currently impacted by marine bio-toxins may be closed for live export of abalone for longer periods than necessary.
- It is proposed that technical work be undertaken to support improved management of toxin events in Tasmania in the future and to allow re-opening to occur more rapidly.

The technical work required is as follows:

- Researchers identified deoxydecabamoylsaxitoxin (doSTX) in the Tasmanian abalone. This is an uncommon marine biotoxin congener which was observed in the abalone following a major bloom of the known toxin-producing dinoflagellate, *Gymnodinium catenatum*.
- Unfortunately, the toxicity of doSTX to humans is currently unknown.
- Therefore, a precautionary approach is being taken to manage the presence of doSTX and it is being assumed that this 'novel toxin' is poisonous to humans and is as toxic as the most potent PST congener (saxitoxin).
- This approach means that several zones in Tasmania are still closed for live export some 8 months later due to the persistence of doSTX in the abalone.
- It is proposed that scientific work be undertaken to establish the potency of doSTX.
- It is likely that this work will help to establish that the doSTX has a very low potency to humans and assist in re-opening affected zones more rapidly in the future.
- This work is very important as the toxin events in Tasmania recur each year and this may help to ensure that there is a wider window in which abalone harvesting can take place each year.

The SAF submission was lodged in late January 2012. The TRF FRDC application to conduct the above mentioned research will be lodged on or before February 16 2012 (closing date for next round of TRF applications)

3. *Market Access Database* – this project is about establishing an online, easy to understand and access, updateable database that details technical market access requirements for important existing markets: - the Trade and Market Access Database is now available online at [www.seafoodservices.com.au](http://www.seafoodservices.com.au).

4. *Australian Seafood Diagnostic Capability Map* – this project is all about CRC participants having access to rapid diagnostic and testing services that enable rapid response to issues with minimal disruption to trade: - a project is underway to investigate diagnostic capacity for marine bio-toxins and there is still funds available for assessing capacity in other areas.

A report has been commissioned focussing on opportunities for developing diagnostic capacity (high quality analytical services) to underpin the integrity of Australian Seafood products for domestic and international consumption and to enhance food safety and market access capability in Australia – the report has been completed and has identified that there is a viable commercial opportunity for a laboratory within Australia. Discussions are underway with potential partners to undertake diagnostic services, provide R, D & E for Australian needs and develop additional capacity such as consulting, training and networking.

This project is of particular relevance to the Australian abalone industry at the moment as testing of abalone foot tissue and viscera for Paralytic Shellfish Toxins in the wake of the recent algal bloom event in SE Tasmania has necessitated the “export” of abalone tissue samples to the Cawthron Institute in Nelson, New Zealand – at the moment, there is no laboratory facility within Australia with the appropriate level of infrastructure and accredited technical expertise to conduct this type of analytical research. Another goal of the project is to enhance food safety and market access capability in Australia. At present accredited and accepted capability for marine bio-toxin testing resides in NZ (Cawthron Institute). This confers significant cost and public health risk to the Australian industry and government.

In 2007-08, Australians consumed 192,000 tonnes of locally sourced seafood. Seventeen percent of this came from species currently known to be susceptible to marine biotoxins that are harmful to human health. In addition the seafood industry exported products

valued at \$1.3 billion. No biotoxin testing facility in Australia is accredited to screen for all existing marine biotoxins that threaten human health. Seafood testing is considered a minor, ad hoc, price driven commodity sideline with a small annual market of around \$700,000. As a result the current scope and scale of biotoxin services in Australia is very limited, with a range of jurisdictional arrangements predominating and a large percentage of these tests being undertaken in NZ<sup>1</sup>. This has significant implications in terms of business risk for the Australian seafood industry.

In 2011, SafeFish and the ASCRC facilitated a business review and implementation plan for marine biotoxin diagnostic services in Australia. A key recommendation of this review is that a single site – single market pathway is commercially realistic and attractive. Further to this, several Australian agencies (industry and regulatory) have joined together in an informal partnership to jointly ‘offer’ (tender) their combined samples for marine biotoxin analysis to a laboratory based in Australia (to secure a lower cost for testing per sample). The ‘Offer’ is being issued by the ASCRC on behalf of the ‘Australian Marine Biotoxin Partnership’. It is anticipated that between two and four Australian based laboratories will submit offers to undertake marine biotoxin testing for the seafood industry and that services will commence in Australia from 1 July 2012.

5. *Compositional Profiles for Seafood products sold by CRC participants* – this project involves the establishment of a consistent platform for developing compositional profiles of seafood products sold by CRC participants with the establishment of an online web portal to provide secure access to the information: - David Padula from SARDI received abalone samples from various exporters across the five abalone producing states to complete the abalone portion of this project – the resultant compositional profiles will then be used by CRC participants to underpin product claims and/or standards and may be used to differentiate products in the market. This data may also be used to negotiate market access in a timely fashion and will also help to ensure that Seafood CRC participants have well analysed positions available to support trade and market access negotiations. As of May 2011, all of the testing was completed. Since then, an extensive peer review process of the results has been underway.

The peer review process has been completed and SARDI are now completing final statistical checks on the compositional data set. The resultant compositional profiles will include information re fatty acids, vitamins, carbohydrates, protein, cholesterol and minerals (macro & trace elements) – the profile will be used to develop an “internationally verified nutritional information panel” for Australian “wild caught” abalone – this should be completed by November 2011. Whilst many exporters already have nutritional information included on their products, this project will provide a scientifically rigorous and independent assessment of the compositional profile of abalone that may then be used to facilitate market access for abalone products in an increasingly regulated international market environment.

Five wild caught abalone samples (each comprising 2 kg flesh) were tested during early 2011 for ~41 separate vitamins, minerals, proximate and fatty acids. All testing, re-testing and data reporting from the analytical laboratories is now complete. The data set has been analysed for compliance with the labs uncertainty of measurement, and for transcription errors and is currently under review by nutritional experts. Sector based reports are being prepared for each ASCRC participant (including wild caught abalone) for the full suite of nutrients tested. This includes mean values, standard deviations, 95% Confidence Intervals and box plots.

Final project reporting to the ASCRC is scheduled for 2 March 2012.

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***Progress Report; CRC project 2009/723: “Analysis of product differentiation opportunities for Australian Wild Caught Abalone in China—Stage 2”; Principal Investigator; Dean Lisson***

This project is designed to measure and benchmark the relative effectiveness of different market development activities for Australian wild caught Abalone in China. It will highlight the options that would be most effective in delivering the objectives of the abalone industry: to increase the awareness of Australian Abalone in the China Market, with the aim to increase repeat purchase from restaurants and increase the value per unit sold from restaurants.

The project was launched in late August 2010 in Shanghai. By a process of immersion within the Chinese (principally Shanghai) marketplace, the project team has been able to appreciate the complexities and challenges of doing business in China. Accordingly, there have been a number of key research findings that will shape the project “going forward”.

The key research findings to date are as follows;

1. The China Market is void of any Quality Assurance system for Australian Wild Caught Abalone.

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<sup>1</sup> Excerpt from Ridge Partners 2011 Review entitled: *Marine biotoxin diagnostic capability and capacity in Australia: A business review and implementation plan.*

2. Premium restaurants currently find it difficult to place Australian Wild Caught Abalone as a permanent entry on their menu due to Price, Supply and Quality volatility and a lack of product certification (COO & HACCP)
3. Possession of non-certified product by restaurants presents the risk of prosecution from Chinese Food Safety Authorities
4. The Australian Wild Caught Abalone Industry is acting on a false assumption that the market prefers live abalone
5. The more sophisticated the Chinese market becomes the less relevant Australian Wild Caught Abalone will become under its current supply regime.
6. Due to recent events (melamine scare) food safety is “front of mind” with Chinese consumers in both the B2B and B2C environments
7. Food manufacturers and retailers are customising foods and educating the consumer to “move the market”
8. There is a high proportion of down stream processed, value added foods in the upper quartile food retailers
9. There is little evidence of down stream processed, value added Abalone in the upper quartile retail environment
10. The “Mass Affluents” (Chinese “upwardly mobile” middle class) are adopting cuisine diversification and cultural engagement with cuisine is changing in China as consumers become more “global aware”, sophisticated and brand conscious in their outlook.
11. For directly imported “fully compliant” abalone products, the key market segment is within 5 star hotels and prestige stand-alone restaurants – specifically establishments with stringent quality, health and hygiene standards.
12. There is a desire for authentic, safe, quality product that meets all certification requirements for both restaurant and premium retail food outlets.
13. There is an opportunity to impart product knowledge to chefs and F&B managers - Market education is critical – chefs are open to being trained and educated regarding abalone products and abalone cuisine development.
14. The industry needs to establish a “direct import abalone product portfolio” with COO and HACCP certification.
15. The industry needs to establish a restaurant and consumer focused promotional strategy for the Australian Wild Abalone product portfolio.
16. The industry needs to seek out a suitable Chinese entity(s) to engage in restaurant recruitment, sales and product supply functions.
17. The industry needs to develop product variants customised to suit the top end restaurant and food service sector.
18. High service levels will provide a source of differentiation.
19. Value Added Products and Services pose an opportunity to expand the category footprint and thus provide differentiation in both the food service and retail environments.

All of the above key findings clearly point to the need to develop and commercialise a Supply Chain Management & Marketing Model that is custom “built” for China. The main components of this model are as follows;

- A. *Quality Assurance Code of Practice* - For the project and subsequently the Australian Wild Caught Abalone Industry – Includes product, supply chain and service codes of practice
- B. *New Product Research and Development Program* – Project must be in a state of continuous innovation to develop a suite of customised and down stream processed value added products for the Food Service and Retail Sectors that is market driven. Includes product form, application of modern technologies and packaging
- C. *Product Compliance Program* – Develop technologies and protocols to streamline product compliance and provide safer and more reliable market access and to reduce the leverage the “Grey Channel” has over the industry
- D. *Industry Market Orientation Program* – Develop and execute a program that engages industry participants and establishes a sustainable market oriented perspective
- E. *Service Model Development* – Develop a service model that engages with the China Market sufficiently to provide the Australian Wild Caught Abalone Industry with a sustainable competitive advantage over other abalone industries and potential substitute industries

F. *Commercialisation* - Develop the required intellectual property and performance metrics to align the project as a commercially viable business model

G. *Place of Origin Brand Development* – Establish a Place of Origin Brand as a repository for the developed IP and as a sustainable Value Chain Management and Marketing Model for the Australian Wild Caught Abalone Industry, using the industry trademark as its logo.

This project is potentially ground breaking for the industry and addresses the need for a carefully constructed and well coordinated marketing strategy using a distinct Australian trademark that will benefit the entire industry. The challenge for industry is to devise a marketing strategy that will increase awareness, demand and ultimately the value of the product all along the supply chain. The question for industry stakeholders is “what sort of marketing and promotion strategy will work and how can we invest in that strategy to provide increased profits to businesses both here and in China?” In the 45-year history of the industry there has never been a large-scale project focussing on researching and developing markets for Australian wild caught abalone.

China is signing up to world (food standard) protocols and is gradually starting to enforce those protocols ... as this process continues, the Australian abalone industry must adapt to the new ways of China otherwise it risks becoming less relevant to the new generation of “Mass Affluents” – i.e. the newly emerging well educated, globally aware and hyper brand conscious China “Middle Class”. In Australia we go to a great deal of trouble to make sure product is of the highest quality and well presented... much of our product then goes through an importation and distribution system (the grey channel) where it potentially loses its identification and where there are no uniform quality handling procedures. By making the move to increasingly go through the legitimate (direct entry) supply chains... it (the product) retains its identity and product handling can be monitored and controlled - this will add further “weight” to the quality standards that we already put into our product and will eventually ensure that restaurants receive the product “at its best”.

An application for formal registration of the identifying industry mark (Australian Wild Abalone) has been lodged with the Australian Trade Marks office. Proceedings required for registration of the industry mark in China are also well progressed. Consideration is currently being given to registering the industry mark in other countries.

Some of the initial KPI's established for this project have not been achieved due to ongoing problems encountered when sourcing and supplying suitable product for the recruited restaurants.

In an attempt to address these issues, the project team approached a broader group of abalone exporters for assistance in supplying product for the project. This request has been met by a group of abalone exporters calling themselves the “Primary Exporter Group” or PEG. This group consists of the following companies: Ralph's Tasmanian Seafoods, Tasmanian Seafoods, Dover Fisheries, Western Abalone and Lonimar. The PEG are considering becoming participants in the project by supplying (legally compliant) product through their existing “preferred” China based importers and distributors under the AWA banner. The PEG are firm in their view that AWA product should be supplied via their existing supply chain partners. The PEG have proposed that a small representative team including ACA & CRC representatives travel to China/Hong Kong to visit key importers to assess their potential involvement in the AWA project going forward.

The PEG have also proposed the introduction of “Nanotag” labelling of AWA products. Nanotags can be used to prevent counterfeiting and product theft and “in effect” will provide a product provenance verification tool that purchasers of AWA product can utilise to satisfy their desire to source genuine Australian wild caught abalone products for their restaurants. The provision of Nanotag technology to project suppliers is being managed via ACA/CRC project 2010/776. Please refer to [www.nanotag.com](http://www.nanotag.com) The project team will work with the PEG group to facilitate the potential provision of AWA product (legally compliant product with nanotag verification) via the established China import supply and distribution chain provided the selected importers/distributors are supportive.

Recruited restaurants that are regularly ordering product will continue to be serviced by the project.

Status update as at 31<sup>st</sup> January 2012 is as follows;

A further China based research trip took place during mid November 2011 (7/11/ to 15/11/2011). Delegation members were as follows: Jayne Gallagher (Seafood CRC); Dean Lisson (ACA Ltd); Mark Webster (Ralphs Tasmanian Seafoods P/L); Wayne Hagggar (Lonimar P/L); Spiro Markantonakis (Dover P/L). Delegation members visited key abalone importers in Hong Kong, Shenzhen and Shanghai.

A report was written at the end of the trip making a series of recommendations.

**Below is an excerpt from the report:**

*A summary of the key points made by the importers in each of those locations are provided below;*

#### ***Hong Kong***

- 1. Work on the market access issues as a priority*
- 2. Price is too high – consider dropping the price. Need to stabilize the price*
- 3. Promotion is welcome and encouraged – but do it in partnership with the importers (they will invite their wholesalers and distributors to a special event)*

4. *Produce material that promotes the benefits of Australian Wild Abalone (healthy, sustainable, natural/organic)*
5. *Nanotag is a welcome initiative*

### **Shenzhen**

1. *Resolving market access is the number one priority – in particular getting consistency in declared value (and make sure that it is a reasonable value – not higher than the actual price!)*
2. *Price is very high at the moment – but understand that it is largely out of our control i.e. Exchange Rate*
3. *China market for Abalone is very mature – people know and understand Australian wild abalone product*
4. *Promotion should be low key and focus on education through the importers to their wholesalers and distributors (information on the story of Australian Wild Abalone would be most welcome)*
5. *All products are smuggled in from Hong Kong at the moment. No legal access*

### **Shanghai**

1. *Price is very high at the moment – Chinese are paying more than they ever have (in their own currency) need to make sure that the price does not go up too high or substitute product may fill the gap*
2. *Resolving the declared value issues – getting consistency in declared value- would be valuable to the importers*
3. *Selling direct to restaurants has been tried and failed by others (Boston Lobster)*
4. *If promotion is done need to make sure that the product quality and supply is consistent*
5. *Promotional materials that the importers can give to their wholesalers and distributors would be welcome (information about the attributes of Australian Wild Abalone is important e.g. DVDs, posters etc)*
6. *Fusion restaurants do provide an opportunity to expand the customer base but don't expect large sales*

### **PART 2: Summary of other discussions**

*In addition to discussions with importers a number of other discussions were held – Austrade, Grey Group, Restaurant involved in the AWA project. A summary of the main points made by these organizations is provided below:*

#### **Austrade**

1. *Need facts and figures to support any market access discussions between Australia and China*
2. *DAFF, DFAT and Beijing Embassy staff would take the lead in any discussions about market access*
3. *Industry wide promotion has worked for other sectors (e.g. wine, meat and dairy) in conjunction with the individual companies promotional efforts. This is all done in association with Chinese based importers.*
4. *Need to make sure that you involve and educate the supply chain (importers and their wholesalers and distributors) as a priority with less emphasis initially on consumer*
5. *Austrade is developing their ideas for 2012 (40<sup>th</sup> anniversary of diplomatic relations between China and Australia) and would welcome input from the Australian Abalone industry*
6. *Don't put in your own office in China at this early stage. Use Austrade facilities at least initially*

#### **Grey Group**

1. *Recognise that there have been successes in the project but that the supply side has not been there to support the market activation efforts. In an attempt to fill gaps some mistakes were made.*

2. *Restaurant feedback was passed to George Chung*
3. *Focus should be on building on the platforms created so far i.e. the digital platform, the PR platform and contacts (relationships) established with chefs. Agreed this should be used to drive interest up the chain only.*
4. *Confirmed direct selling is not scalable and therefore would not work*
5. *The market activation should stop while supply issues are sorted out and as a priority work with the importers – provide information to them and help them drive it through the wholesale and distribution system*
6. *Grey and Moisson need a revised brief from ACA/CRC regarding the next stage of the project. This should be done once the Australian industry has an agreed plan. Don't rush in!*

#### **Restaurant**

1. *Very interested in the attributes of Australian Wild Abalone (healthy, sustainable, natural)*
2. *Would be very interested in doing a specific promotion for the product and getting feedback with a view to differentiating themselves in the competitive restaurant market*
3. *Had repeatedly advised that they were interested in buying product but there was no follow up from the project.*
4. *Initial product requirements would be small but if successful could result in regular repeat orders (albeit still at a relatively low level)*

#### **Other General observations and comments:**

1. *Price reductions have been observed in all seafood products, including high end products. Australian abalone is the only exception to this.*
2. *Trading terms (3 months) are offered to restaurant customers, therefore further emphasizes that the importers and their distribution chains must be used. We do not have the resources to follow up on payments.*
3. *Very small deliveries (live product) were observed at the wet markets. The orders included other products. Only two Abalone were packed in each order.*

#### **PART 3: DRAFT Recommendations**

*Based on the discussions and other observations made by the members of the delegation the following recommendations are made for the consideration of ACA, CRC and AAA.*

#### **PROJECT MANAGEMENT**

*To move the project forward, a Business model/plan based around the following recommendations must be put in place, clearly defining all procedures and steps that must be adhered to. Each phase must also be signed off before the Project proceeds to the following stage. All stages must proceed in order.*

*A management group should be formed comprising members of ACA and PEG to work with CRC on developing and implementing the business model/plan to ensure full accountability and transparency.*

#### **MARKET ACCESS**

*First priority is to gather as much information as possible from all relevant sources in order to develop a plan to address key market access issues (including declared value and use of SO<sub>2</sub>)*

- *Talk to HK ambassador (Sydney), Beijing Embassy staff (Ambassador, James, Amy and the two customs staff) DFAT, DAFF to test out the idea that we send a letter regarding the "buying" price of abalone. Need to bear in mind to take it softly.*
- *Investigate the option suggested by Austrade that we try to get a side deal negotiated in the FTA discussions*
- *Check progress in pursuing the case to allow the use of sulphur dioxide in canned product at an internationally acceptable safe level (Japan's limit is suggested as a justifiable MRL). AAA is pursuing this issue. Question is what has been done so far? CRC is funding Cath McLeod to do a risk assessment and prepare the technical argument to pursue the issue (please refer to comment on sulphite risk assessment below).*

**Sulphites in Canned Abalone - Risk Assessment has been completed**



The permitted level of sulphites/SO<sub>2</sub> in canned abalone is 0 ppm in China's food regulations and 1000 ppm in Australia's food regulations. China is a major importer of Australian canned abalone, both directly and via Hong Kong, and enforcement of the 0 ppm sulphites/SO<sub>2</sub> in canned abalone has resulted in trade failures. A risk assessment to underpin a maximum level of 1000 ppm in canned abalone has not been previously undertaken, nor has evidence of the levels of sulphites/SO<sub>2</sub> in Australian canned abalone been collated. A risk assessment was commissioned by the ASCRC which aimed to collect information on current industry practices and to estimate the food safety risk of sulphites/ SO<sub>2</sub> in Australian canned abalone. The risk assessment has now been completed and provides an objective basis for potentially negotiating import requirements for canned abalone into China with respect to implementation of a permissible sulphite level (as opposed to the current 'nil' tolerance approach).

*Action as deemed necessary once all the information has been gathered.*

#### **AWA WEBSITE**

*Get the website developed as a priority. It must be professional and provide the information needed to help exporters and importers. It would help in other markets as well (Japan, Singapore) Initial actions:*

- *Remove George Chung from the contacts*
- *Change pictures to more generic ones and unbranded products.*
- *Add video*
- *Have Chinese (simplified and traditional), Japanese and English*
- *Links to approved and registered exporter/processor websites*
- *Appoint an Australian based web developer*
- *Add a page that details the restaurants that are serving AWA product*
- *Add a page that details the importers in each city. Individual agreement/permission to be sought.*

#### **INITIAL PROMOTION IDEAS**

1. *Educational pack that details the health benefits, managed fishery (sustainability) clean and green, natural attributes, nanotag aspects of the AWA product (the value proposition to the importers)*
2. *Plan an Abalone (or Australian Seafood) "specific" trade event over two days in Hong Kong in conjunction with importers (invitations from them to their trade), nominated chefs etc. Invite China based importers*
3. *Investigate newspaper and television (above the line) advertising (as part of an overall promotional strategy)*
4. *Although we are looking to promote to "other" newer style restaurants, the fact is that one we visited, the chef had previous abalone cooking experience. It would therefore require considerable training and education if possible to get "new" chefs to the standard required.*
5. *Get video footage to use on website and at other promotion events*
6. *Develop a PR/Media strategy – target airline magazines etc*
7. *Maintain the current recruited restaurants – give them the list of AWA suppliers, with contact details. Give the list of restaurants to all approved and registered exporters.*
8. *Continue Nanotag development and roll out*

As of January 31<sup>st</sup> 2012, the nanotag trial is very close to commencing – participating processors are firming up orders of the nanotag wands based on predicted product volumes for 3 months worth of sales. Ian Allen from Nanotag has been working closely with Karen as she works with the processors (via visits to their premises) to explain the technology and assist each processor to understand how it works and how to integrate the technology into their processing lines.

The EX numbers of each export entity have been "printed" onto the proprietary tags which contain the words "Australian Wild Abalone" and a stylised map of Australia. Each processor will have their own proprietary tag with their own unique EX number. Product buyers in the importing country will be able to examine the tags with a special "microscope" to verify product provenance. The customised tags will be incorporated into "wands" which will be used to place the nanotags onto the selected

products. It is anticipated there will be some targeted promotional activities to roll out the nano-tagged product in Hong Kong and China.

As at 31/1/2012, total accumulated AWA project sales (to date) were valued at \$170 060.00 AUD – this figure represents total sales to restaurants recruited via the initial AWA restaurant activation strategy and distributed by Shanghai Penguin Trading Company (SPTC) and Honghai Seafood– continued ongoing monthly sales of approximately \$14 000.00 AUD of dried and frozen black-lip abalone are expected (principally via SPTC). There has been \$59 060.00 worth of sales in the four months between 30<sup>th</sup> September 2011 and 31<sup>st</sup> January.

Frozen black-lip and green-lip product supplied to the project by Ralphs Tasmanian Seafood and Esperance Abalone in May/June of 2011 was distributed by Honghai Seafood Trading Company in Shanghai during the latter half of 2011. As of late January 2012, all product placed with Honghai has been sold and a full stock inventory and financial reconciliation has been completed with final payments to processors.

Project team members and participating processors met in Melbourne on February 15, 2012 to discuss the next phase of the project. There will be a management committee established which will be responsible for steering the project through the next phase which will include the roll-out of the nanotags and some promotional/educational activities within the supply chain through to the end user. A dedicated B2B website will also be established as an educational tool for purchasers (and potential) purchasers of AWA products. More detail regarding the next phase of the project will be provided in the next project milestone update due in May 2012.

***Progress Report; CRC project 2009/708 “An Abalone Quality Assurance program for the Australian Wild Caught Abalone Industry”;***

This project forms part of Objective 2 of Investment Platform 1 of the ACA's Strategic Plan – “Establish an ACA Ltd Quality Assurance and Product Integrity Program through the supply chain that is applied to all legally harvested Australian abalone”. The program is to involve fishers, processors, exporter/importers and handlers.

The need to adopt a consistent quality assurance approach has been identified in both the Tasmanian Abalone Council Strategic Plan 2008-2013 and the Abalone Council Australia Strategic Plan 2007-2017.

There have been several false starts to this project that have delayed the intended rollout of a national QA Code of Practice.

Recently (in mid January 2012), the QA Master Manual (developed by the Tasmanian Abalone industry in 2009) has been made available to a Nationally Accredited RTO, Seafood Training Tasmania (STT) based in Hobart. The manual along with other documents relating to bio-security and “shucking at sea” (SA and WA) have been provided to the principals of STT for the purpose of them providing a quotation to use this material to develop a training package suitable for industry roll-out.

The target audience will be Divers, Deckhands, Mother-boat Skippers, Processors and Transporters across all abalone producing states within Australia.

Seafood Training Tasmania has been asked to do the following:

Map out the QA Code of Practice (CoP) and supporting documentation into a course format.

In particular, STT are to develop:

- course curriculum /learning outcomes,
- trainers material (power points and learning resources) ,
- student handout (learners guides and notes),
- questionnaires/exams and
- completion documentation (statements of Attendance) in-line with QA CoP

*All course material to develop around the core requirements of the Australian Abalone industry with elective delivery option to tailor to meet the needs of the Audience and the unique handling practices of the State that they operate in. (shuck @ sea etc.)*

Training to be contained within a 3-4 hour format (half day).

Training will be non-accredited allowing for maximum customisation and to minimise course length and (therefore) cost to deliver.

A Statement of Attendance will be issued to attendees of course. The course is to be developed in a format that allows for further expansion into accredited training as Industry/market demand for more rigorous QA/food safety/quarantine compliance increases in the future.

Negotiations regarding STT's costs to develop the Training package and then deliver the training are currently being finalised.

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**Progress Report; CRC project 2010/737: Marine Bio-toxins and Market Access for abalone"; Dr Cath McLeod et al**

Paralytic Shellfish Toxins (PST's) are the most common and widespread marine bio-toxins detected globally. These toxins are water-soluble and heat stable and have been confirmed as causing the toxic syndrome known as paralytic shellfish poisoning (PSP) in humans.

The report for earlier bio-toxin project 2008/909 confirms that there exists a negligible risk of Paralytic Shellfish Poisoning (PSP) to humans from the consumption of *H.laevigata* (greenlip abalone) even after the high contamination expected during typical dinoflagellate blooms. This is good news for the wild harvest sector and I am pleased to report that the EU has now accepted the conclusions from the above project and that Australian wild harvest abalone has now formally regained access to the EU markets.

A follow on bio-toxin project (2010/737) has now commenced - a key aim of the new project is to provide an updated risk assessment to support standard setting processes at Codex - more specifically to support the debate that bio-toxin standards should be risk based and not mandated across the board. This assessment will also be able to support negotiations with China and Japan (note that bio-toxins are currently being targeted by these markets). The project will fill some of the data gaps identified in the first project and also extend the Risk Assessment to include other marine bio-toxins (in addition to PSTs).

The technical trade hurdles that Australian seafood products have to overcome to maintain international market access increase each year, with additional microbiological and chemical tests being imposed by importing countries. The Australian abalone sector has not escaped this increasing regulation trend. For example, in 2010 abalone and marine bio-toxins are being targeted by the Chinese and Japan authorities for import testing. - Regulatory standards for marine biotoxins in abalone have been enforced by the EU since 2007. - The Codex Committee on Fish and Fishery Products are progressing an international abalone standard with proposed marine biotoxin testing requirements. These standards would potentially require Australia to intensively sample abalone from the entire coastline.

Australia is a major producer and exporter of wild caught' abalone. Due to the reliance of the abalone sector on export, it is important that technical access requirements are appropriate in scale. Meeting a standard for bio-toxin levels fundamentally would not appear to be an unreasonable requirement. However, the application of marine bio-toxin standards in Australia is logistically difficult to implement and costly, because this potentially would require the testing of a large proportion of the coastline in order to comply.

In 2009, fundamental research was undertaken (ASCRC Project 2008/909 – mentioned above) to determine the risk that Australian abalone carried to consumers. This research demonstrated that marine bio-toxins in Australian abalone are well below acceptable standards and are of negligible risk. On the basis of the preliminary data generated in Project 2008/909, a minimalistic sampling and testing regime was proposed that would verify the ongoing extremely low bio- toxin status of our product. However, Project 2008/909 also identified significant data gaps that adversely affect the accuracy of the risk assessment and this limits Australia's ability to promote a minimalistic sampling/testing strategy. The major data gaps identified were:

- Insufficient data on levels of marine bio-toxins in wild-caught Australian abalone (only 52 samples analysed in Australia).
- Limited data available on depuration dynamics of toxins from abalone. - No data available on the effect of the actual canning process on the levels of toxins in abalone.

Therefore, in order to confidently promote a risk based bio-toxin testing strategy with Asian markets (China and Japan) and at Codex, the data gaps identified in Project 2008/909 need to be addressed. Consequently the research program in the second bio-toxin project (2010/737) aims to: (1) provide baseline data on marine bio-toxins in Australian abalone; and (2) develop a scientifically robust position (risk assessment) to support Australian negotiations with key export markets (China) to implement risk based marine bio-toxin testing protocols.

In short, this project aims to reduce technical barriers to trade for Australian abalone in key markets such as China, Japan and the EU. This outcome will be delivered by using the risk assessment output of the project to negotiate risk based international bio-toxin standards (at Codex) that are practically achievable and minimise future industry expenditure.

ASCRC Project 2009/752.10 'SafeFish' is also being undertaken by the SARDI Food Safety group. A key component of SafeFish is the provision of technical advice to Codex Australia on key Codex standards of relevance to the seafood industry. Outputs from this proposed project (e.g. the risk assessment) will be utilised by SafeFish in providing advice on the draft Codex abalone standard. This is a core pathway for the utilisation of outputs from the proposed project and for achieving the desired outcome of a risk based international standard.

Another goal of the project is to enhance food safety and market access capability in Australia. At present accredited and accepted capability for marine biotoxin testing resides in NZ (Cawthron Institute). This confers significant cost and public health risk to the Australian industry and government. This project will be a collaborative effort between Australia and New Zealand and this will

facilitate transfer of knowledge and assist in capability building for broader industry (e.g. abalone, cockle, oyster and mussel industries) benefits in Australia.

This second bio-toxin project will involve undertaking a sampling programme that will involve the testing of ~200 samples. Whole tissue samples will then be tested for the key regulated marine biotoxins (PSP, NSP, DSP and ASP).

There will also be "Adverse Event Sampling" within this project - this aspect of the project aims to investigate the potential of abalone to concentrate toxins under micro-algal bloom conditions (worse case scenario). Abalone and bivalve samples will be taken from each of two separate sites (Tasmania and NZ) that are known to be prone to regular algal bloom events. Sample collection will occur when toxin producing algae are detected at high levels in the water and when bivalve shellfish are known to be contaminated with toxins (via the routine state shellfish programmes). One sample site will be located in Banks Peninsula, New Zealand as this area is known to have *Dinophysis* (DSP toxin producer) bloom events on an annual basis. The other site will be located in Tasmania where recurrent *Gymnodinium catenatum* (PSP toxin producer) blooms occur. *Gymnodinium catenatum* is a dinoflagellate (type of phytoplankton) that produces Paralytic Shellfish Toxins (PST). Bivalve shellfish are well documented to accumulate significant levels of PSTs and therefore regulatory limits for these toxins have been established. *Gymnodinium catenatum* blooms annually in Tasmania and causes routine closures of bivalve shellfish areas.

*Adverse event sampling* occurred in the d'Entrecasteau Channel in SE Tasmania in May 2011- Ten abalone and ten bivalve samples from each of two areas were taken and tested for the relevant toxin. The bivalves were tested whole and the foot and visceral portions of the abalone were tested separately (due to potentially accumulation of toxins in foot tissue). These samples were sent to Cawthron (NZ) for analysis. Below is a summary of the algal bloom event and the sample testing outcomes;

- In late November 2010 low levels of *Gymnodinium catenatum* cells were first detected in the Huon Estuary in Tasmania.
- By mid December the cell numbers had reached levels of concern and bivalve flesh testing was instigated (note, this area does not contain commercially farmed bivalve shellfish).
- The early stages of the bloom seemed more focused on the lower Huon Estuary, but by mid March 2011 sites from as far north as Roberts Point and as far South as Hastings were affected by the *Gymnodinium catenatum* bloom.
- A public health warning against eating 'wild harvested' shellfish was issued on the 25th March 2011. This did not include abalone or rock lobsters.
- Bivalve shellfish (mussels and oysters) have been taken and tested throughout the bloom event by the Tasmanian Shellfish Quality Assurance Programme (TSQAP) and have consistently been found to contain significant levels of PSTs, above the maximum permissible limit (800 µg/kg).
- This bloom event appears to be a relatively significant event, in terms of cell numbers and toxin levels in bivalves, when compared to other years.
- The most recent phytoplankton samples taken in early May indicate that the bloom is likely to be crashing.

#### ***Abalone Sampling***

- Given the significance of this bloom event a decision to sample abalone as part of the ASCRC project 2010/737 was taken.
- Adverse weather conditions prevailed during late March, early April and prevented abalone samples being taken.
- Abalone (5 x individual black foot abalone) were collected from Partridge Island (M9) on Thursday 21/04/2011
- Abalone (5 x individual black foot abalone) and a mussel sample were collected from Garden Island (M10) on Monday 02/05/2011

#### ***Abalone PST Results***

- The abalone collected were tested individually (in total n=10) and the viscera and foot tissue was tested separately by the Cawthron Institute in Nelson, New Zealand (under contract to SARDI).
- The abalone were tested by an HPLC screen method (the 'Lawrence method'), which has been approved for regulatory purposes by the European Commission and the New Zealand Food Safety Authority. The method is also IANZ accredited for bivalve shellfish (equivalent to NATA).
- The HPLC screen test results were received Monday 16th May 2011.
- The HPLC screen results for abalone foot tissue from Garden Island (M10) ranged between 97 - 144 µg/kg and abalone viscera between 829 and 6711 µg/kg. All abalone meat (n=5) and viscera (n= 5) samples were positive.
- The HPLC screen results for abalone foot from Partridge Island M9 ranged between 187 - 747 µg/kg and abalone viscera between 232 and 3251 µg/kg. All abalone meat (n=5) and viscera (n= 5) samples were positive.
- The regulatory limit for bivalve shellfish is 800 µg/kg.
- After receiving the HPLC 'screen' result the HPLC confirmatory method was undertaken on the highest abalone foot and viscera samples.
- Confirmatory results were obtained on 19/05/2011 that confirmed that the abalone contained 586 µg/kg and 2437 µg/kg in the foot and viscera respectively.

As a result of these adverse results, discussions were held between SARDI, the ACA and local abalone processors and a further series of sampling and testing was conducted later in May 2011 from a broader area including the southern shore of Bruny Island, the Actaeon Island and Recherche Bay. The samples were also sent to Cawthron for analysis and the results indicated that abalone from this broader area had also accumulated levels of bio-toxin which in some cases exceeded the permissible limit. These results were disclosed to AQIS and discussions were initiated between representatives of SARDI, ACA, TAC, Tasmanian Department of Health and AQIS. Following these discussions AQIS advised Tasmanian abalone exporters of a series of restrictions regarding export of abalone harvested from the affected area - the "head of power" for AQIS to impose such restrictions lies within Clause 1.1 of Schedule 5 of the Export Control (Fish and Fish Products) Orders 2005 and Order 75.

Since the first restrictions were imposed in late May 2011, there has been some relaxation of these restrictions due to depuration of the toxins with the passage of time (abalone metabolise the toxins). As at 30<sup>th</sup> September 2011, a further series of sampling and testing was being organised for early October – it is likely that further depuration of the toxins will allow some of the remaining AQIS export restrictions to be relaxed/removed.

CRC project 2010/737 will continue throughout 2011/2012 and will gather more data as part of the baseline bio-toxin assessment as well as via the “adverse event” sampling process – analysis of depuration rates will be an important component of this work and the effect of canning on toxin reduction in abalone will also be investigated using commercially viable time/temperature combinations in the processing step.

The data gathered in the above project components will be used to update the risk assessment generated in the previous market access for abalone project (2008/909). The scope of the risk assessment will be significantly expanded to cover all major toxin groups (DSP, ASP and NSP in addition to PSP toxins), key commercial species of abalone in Australia and New Zealand and include information on toxin reductions through canning and depuration. The risk assessment will be the key component used to support the development of risk-based standards at Codex and for trade negotiations with China, Japan and the EU.

Following the initial notification of PST levels above the maximum permitted level, AQIS, the Abalone Council of Australia and the ASCRC requested additional technical advice to assist in determining appropriate management arrangements in the future. Consequently an Expert Consultation Group meeting was convened by SafeFish to identify key knowledge gaps and potential avenues of work that may assist risk managers and industry. The Expert Group provided a series of recommendations on future work that is critical to support ongoing trade.

To assist industry to fill the information gaps identified by SafeFish, a tactical research fund application (FRDC) has been prepared on behalf of the Tasmanian Abalone Council to support work which aims to: (1) establish the toxicity of an uncommon PST congener discovered in black lip abalone from Tasmania in 2011; and (2) to further investigate and confirm the causative organism of the PSTs in abalone (**please refer to earlier comments under section 2 of the CRC Communal projects – Seafood Access Forum**). It is hoped that this research will lead to improved management protocols following future algal bloom events. Further work will also be undertaken on the existing ASCRC project (2010/737) in 2012, including investigations into the impact of canning on PST levels in abalone.

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**Progress Report; CRC Project 2010/704 — Maximising the value by minimising stressing abalone – Optimising harvesting strategies: Dr Craig Mundy and Dr Natalie Moltschanivskyj**

Harvesting, handling and transportation of abalone are stressful events and influence the capacity of the animals to recover from harvesting and their post-harvest survival. Having a better understanding of the stress profile during these phases will enable divers, transport drivers and processors to better manage the supply chain and will maximise the condition and survival rates of abalone and ensure that the maximum value of the harvest quota is retained. The concept proposal for this project has been modified several times and has been before the CRC RAC for consideration.

A workshop was held in Hobart and the project scope was agreed with industry stakeholders to include the development of a stress profile from (a) point of harvest to processor and (b) during tank holding phase prior to export and/or processing. The stress profiles are to be developed for a range of harvesting and transport scenarios including day fishing from runabouts and extended stay fishing from abalone mother-boats.

Based on the understanding gained from the stress profiles, the project will make a series of recommendations regarding improved harvesting, handling and transportation methods as well as how to minimise stress (and spawning) of abalone whilst in the tank holding phase prior to export and/or processing.

Assessment of stress will be made using blood samples of animals based on measures of haemolymph glucose, pH, lactate, and CO<sub>2</sub>; these parameters respond when animals have restricted access to oxygen or become heat stressed. In addition, phagocytes counts will be made as this is an indication of an immune and stress response. Blood is sampled from the large blood vessel on the dorsal side of foot of live animals, the pedal sinus, using a syringe. As natural biological events and processes will affect stress levels of wild animals, baseline measures of blood parameters will be obtained by sampling blood from animals underwater, within minutes of being chipped off the rock. For each animal from which blood samples are taken, a visual assessment of somatic, reproductive and shell status of the individual will be recorded.

Sampling will be undertaken over a 10 day period in summer and winter, allowing an assessment of the effect of water temperature and reproductive status on stress during the supply chain at times of year when mortalities post harvest is greatest and smallest.

As temperature is one source of stress for abalone during transport temperature loggers placed in the crates/bins will provide data about the temperature experienced by the animals from the time they are stacked to arrival at the processors.

Once at processors an assessment of the condition and health of the animals will be made using industry based protocols and criteria, additional mortality rates and spawning events will be quantified. If spawning occurs at the processors fertilisation rates

will be assessed using gametes released to determine if animals are releasing gametes prematurely as a stress response, or if the animals are reproductive mature at harvest and changes in environmental conditions trigger spawning.

Project update as at January 31<sup>st</sup> 2012 is as follows:

1. The project has been re-scheduled following several delays in the approval process and will effectively commence mid February 2012. Dr James Harris, an abalone blood specialist will travel to Tasmania in early February to train IMAS staff in abalone blood sampling, and for training in laboratory processing of the blood samples.
2. A questionnaire has been developed to gain an understanding of the range of protocols (if they exist) in place by divers and by fishers. For example frequency of wetting, number of abs in bins, do they use standard bins, an idea of the range of times abalone are held in day boats prior to transfer to processors, use of wet wells, degree of shading, length of time before returning to mother boats, etc
3. Temporary holding facilities for abalone are being arranged at IMAS to allow Prof. Frappell to test the respiration tags for continuous monitoring of heart rates and physiological condition during the holding/transport process.
4. An initial controlled experiment using research divers on research vessels will be conducted at George III reef SE Tas with blood samples taken underwater, after landing on the deck, 1, 2, 3 hours after landing & stacking, at the boat ramp, and on arrival at the processor. This experiment is designed to tightly control the sampling in regard to certain stages of the harvest, handling and holding process.

The assessment of stress will be made using blood samples of animals based on measures of haemolymph glucose, pH, lactate, and CO<sub>2</sub>. These parameters respond when animals have restricted access to oxygen or become heat stressed. These stress responses are not apparent in the blood until approximately 30 minutes after the abalone becomes stressed.

Note that IMAS will apply for a permit from DPI/PWE for the abalone divers involved in the experiments to collect a specific number of abalone out of quota (~60/day) for this experiment. Existing permit arrangements allow IMAS to sample abalone from George III reef for the larger winter/summer controlled experiment.

On Monday the 13<sup>th</sup> February the project dive team will head to Southport and start the first major summer experiment at George III Rock over that week, finishing on Friday the 17<sup>th</sup> February 2012.

***Progress Report; CRC project 2009/714: "Decision Support Tools for economic optimisation of invertebrate fisheries"; Principal Investigator; Dr Caleb Gardner***

This project will conduct baseline economic studies across all Australian abalone fisheries that will provide a snapshot of the fisheries and will provide the basis for the economic analyses. A methodology will be produced for using the economic data and stock assessment reports to make TACC recommendations. The economic benefits of various fishing to market strategies will be determined.

This project is one of a suite of Decision Support Tool projects (based on bio-economic modelling) in our key invertebrate fisheries (WRL, SRL and ACA). In our provisional CRC economic benefits modelling these projects stand to deliver the most significant ROI benefits of any projects. Whilst the three Decision support tool projects are set up as separate projects there is cooperation between them, particularly in the area of modelling and in communication, uptake and adoption (e.g. can the model that has worked well for SRL in Tasmania work as well for WRL and Abalone fisheries). The final budget has come in at \$250,959.00, \$21,041 lower than the approved budget. The WRL project is already underway and the SRL project has just been approved by SRL and will now go to contract.

The two Future Harvest projects (this one and 2009/715 – "Optimising business structures and fisheries management systems for key fisheries" – see below) have now been finalized after long periods in gestation and the CRC is very keen to get them both underway. Both of these projects lie at the core of what the Future Harvest theme is about (improving the economic efficiency of our key fisheries) and cross multiple sectors and the CRC and FRDC are strongly supportive of both. The good news is that the CRC has driven a hard bargain with the PIs and reduced the costs of both projects below the provisional budgets appearing in the spreadsheet and approved by the CRC and FRDC Boards.

Project update as of January 31<sup>st</sup> 2012:

The project team has recently completed a supply/demand analysis on international trade data, mainly looking at substitution effects from cultured product. That's broad scale macro stuff to enable price effects from changes in supply to be predicted. Next steps here are the cost surveys (this has issues like ethics approvals that we're working through) and the first workshop to involve all the states.

***Progress Report; CRC project 2009/715: "Optimising business structures and fisheries management systems for key fisheries"***

For 2009/715, this is a more innovative project with the early stage focused on application of a new wealth based fisheries performance indicator that is developing credence with involvement now from the World Bank. The project is a true multi-sector

project and is to be funded by SRL, ACPF and ACA. The structure is different to the decision support tools project in that it is a single project working with three participant industry sectors (and we have all too few examples of this type of project in the CRC). The project has three sequential objectives to be applied to multiple individual fisheries within each industry sector:

1. Assess the performance and identify impediments to wealth creation in selected CRC fisheries (based on the new Fisheries Performance Indicator - FPI)
2. Describe and evaluate innovative systems that have been established to improve the performance of successful fisheries worldwide (particularly any that address the weaknesses identified through the FPI process).
3. Identify practical opportunities for overcoming impediments to wealth creation and improving the performance of selected CRC fisheries.

This project was finally approved by the ACA at its meeting on 20<sup>th</sup> July 2011.

Project update as at 31<sup>st</sup> January 2012:

To date there has been no abalone specific activity on the business structure project. The project team is doing some work with the prawn fishery during February 2012 - project is underway.

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**Progress Report; CRC project 2010/776: "Australian Wild Abalone – New Product Development" Principal Investigator; Karen McNaughton**

While the existing China Market project 2009/723 will continue to work on differentiating Australian Wild Abalone in China as a premium product, we have a unique opportunity as we are building new customer relationships to work closely with them to firstly ensure that existing product complies with the technical requirements and supports the premium positioning being marketed. Following this we can work closely with them to develop new product variants and develop a new product supply chain.

New Product types verbally discussed with suppliers, distributors and customers as part of the project so far include frozen sliced product, product with sauce, chilled vacuum packed meat, chilled modified atmosphere packed meat, gut/viscera product. Development of these products and a market for them will help remove the price volatility and supply issues associated with a mainly live market and thus overcome one of the barriers to having Australian wild caught abalone product on high-end premium restaurant menus.

For both existing and new products, the project will provide technical input to ensure that the product can meet the requirements of the Chinese import authorities and ensure that authentic, safe quality product is available through the direct supply channel to the high end food service sector (also meeting their standards). This work will provide evidence to support the product safety and quality claims of Australian wild caught abalone trademarked product.

It is proposed to run the project in two stages. The first stage will focus on the existing products being supplied as part of project 2009/723 and the associated technical support for market access and product compliance, including quality systems and product specification documentation for the supply chain.

Stage two will focus on new product variants based on end user and customer feedback and this stage will follow recognised best practice product development process. Again these new products will be supported with technical information to meet regulatory and customer requirements for supplying premium product directly into China.

This proposal has been developed with members of the project team for Project 2009/723. Specifically meetings held with Dean Lisson and Jayne Gallagher to discuss the initial scope of the project (27/10/11). The PI visited Tasmania on 16/11/10 to meet with Abalone Council Australia (ACA) and Australian Seafood CRC (Dean Lisson and Jayne Gallagher) to develop the proposal further. Tas Live Abalone (processor) was visited (who are a current abalone supplier to project 2009/723) and the project proposal detail discussed and agreed in principle. The consultation process is ongoing with the ACA and CRC to ensure that the project proposal meets stakeholder needs.

The project concept was approved by the RAC, CRC and FRDC boards in February 2011.

Discussions will continue with the current suppliers to CRC Project 2009/723 with regard to cash contributions for stage 2 from the companies involved, of up to \$100,000.

The agreed objectives of the project are as follows;

- 1 To identify and implement optimised post-harvest value-added processes with current suppliers of project 2009/723 to ensure product meets the premium positioning and product compliance.

- 2 To develop, trial and evaluate a range of new Australian wild caught abalone products (from concept to test market), with current suppliers to end users in project 2009/723.
- 3 To provide technical support to supply products (existing and new) through the direct supply

The PI for this project, Karen McNaughton travelled to China in May of 2011 and spent the first two days with the Grey Group team, being briefed on the current status of project 2009/723. A new distributor to this project, Honghai Seafoods was introduced and a visit to their facilities was undertaken.

An interview to gain product quality feedback was undertaken with the purchasing manager of one of the restaurant chains being supplied with AWA abalone. Current issues indicated were of soft product and sizes/packaging not being to the agreed specification. Photographic evidence was received of these issues.

Understandings were gained about the distribution channel and handling of the frozen abalone products. Direct feedback on quality issues and photographic evidence from end users was obtained to report back to the Australian abalone processors. New product ideas were also documented to discuss with our processors. Updates to Chinese food standards were obtained that directly impact on the exporting of canned abalone into China. This document was passed to SARDI Food Safety market access colleagues for reference and translation.

Karen has recently visited abalone processing facilities in Streaky bay, South Australia as well as spending a day on a working abalone harvest vessel. The cool chain process was followed through from the vessel to the factory using two methods on selected green-lip and black-lip abalone sent through the usual commercial process, including blast-freezing at the factory. This process was monitored using I-button temperature data loggers (which were inserted into selected black-lip and green-lip abalone once shucked on board) and there was periodic use of a temperature probe.

Texture and tissue pH were measured of the abalone onboard and at the factory. Once frozen, the temperature monitored abalone were sent back to the Adelaide laboratory and placed in a -18°C freezer. These were thawed after 2 weeks, loggers removed and weights and texture measurements taken. Texture was also monitored through chilled shelf life.

Fluid loss was monitored from shucking (at sea) to the factory. Bagged abalone were sent through the cool chain with fluid loss measured by difference the following day and after freezing.

The temperature and texture data is currently being collated and reviewed. This will form the basis of the information to determine further trials with this participant. The next stage is targeted before the end of October.

Karen will be progressively visiting all of the factories that are currently providing product for the China Market project 2009/723 to examine their cool chain and processing and packaging technologies.

Karen is currently working with Nanotag technologies regarding the potential use of this technology with suppliers to the China Market project 2009/723.

As of January 31<sup>st</sup> 2012, the nanotag trial is very close to commencing – participating processors are firming up orders of the nanotag wands based on predicted product volumes for 3 months worth of sales. Ian Allen from Nanotag has been working closely with Karen as she works with the processors (via visits to their premises) to explain the technology and assist each processor to understand how it works and how to integrate the technology into their processing lines.

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A soft launch of the 3 month nano-tag trial will commence shortly (March 2012?)

Dean Lisson February 2012