

Abalone assessment and management: what have we learned, what are the gaps and where can we do better

Some points from the Melbourne workshop

7-8 March 2019

National Status of stocks

- Of the 24 abalone stocks assessed under SAFS, 10 (42%) are classed as 'sustainable' with the balance classed as 'depleted' (12%) or 'depleting' (46%).
- Wild abalone production in Australia has fallen from around 5,300t to 2,800t in the last 20 years, despite strong action to reduce catches.
- Fishing mortality is but one cause of decline; others include: habitat loss due to *Centrostephanus*, environmental change & marine heat waves, disease outbreak (AVG, *Perkinsus*), and reduced natural recruitment, all of which reduce productivity.

National status of stocks (2)

- The vulnerability of exploited abalone populations, which have demonstrated high susceptibility to overfishing and depletion both in Australia and in a number of fisheries overseas
- Current low resilience leaves Australian abalone stocks highly exposed to external influences and there is a need to better match catch with productivity
- Stock recovery from severe depletion has rarely been demonstrated and, where it has occurred, this has been after many years with little to no fishing.

Data and analysis

- Wide range of data holding between states
- Catch and effort are the only comprehensive data sets across all jurisdictions and while there is some level of GPS and depth coverage in most jurisdictions, there is considerable variation in space and time.
- CPUE-based indicators will need to continue to be used in abalone assessments and there is a need to account for the effects of factors other than relative abundance, that can effect CPUE

Key Issue with CPUE

- Fishers can maintain CPUE in the face of declining biomass (hyper-stability) up to the point where severe depletion becomes apparent and management intervention is unlikely to recover stock abundance.
- When fishers are no longer able to adjust practices to maintain CPUE, this should be interpreted as a clear sign of depletion.

Vic WZ – A good news story

- The outbreak of AVG decimated the zone leading to its closure in 2006.
- The fishery re-opened in 2009, with a TAC of 42t set in order to facilitate recovery of the fishery.
- Management arrangements include fine-scale management by reef code, the use of GPS loggers and increasing size limits by 10mm to 130mm.
- The benefits of collaboration between fisheries managers and industry was emphasised including sharing industry-collected data.
- Recovery will be influenced by a combination of appropriate TAC and LML changes and 'slow and steady' approaches to management changes

Harvest strategies

- Disparate approaches to decision systems and harvest strategy (HS) frameworks between (and within) jurisdictions for the same or similar species
- All HSs still apply a weight of evidence approach to the final decision-making process reflecting scale issues and different interpretation of data value between sectors.
- Recommended that relevant abalone scientists meet regularly to discuss HS development, data needs and implementation.

Stock Enhancement

- No abalone stock enhancement or restocking projects occurring within Australia
- The lack of clear planning and strategic direction to provide the rationale for stock enhancement / restocking, including liaison between various sectors and regulatory agencies
- Biosecurity/disease risks with potential for significant impacts to wild fishery, including AVG, *Vibrio* and *Perkinsus*
- Stock enhancement might be seen as a means of not having to reduce catches, however stock enhancement does not compensate for inadequate fisheries management

Past, present and future research

- In the last 17 years, some 80+ projects at a cost of approximately \$18.5M have been implemented in the abalone sector
- Overall, there appears to have been limited adoption and translation of research into management change, one exception being an increased emphasis on spatial assessment and management
- stakeholders actively involved in projects to ensure that there is 'buy in' and that RD&E outputs are 'fit for purpose', and thus more readily adopted.
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Future Projects

- Diver observation
- Management Strategy Evaluation (MSE) of harvest strategies
- Indicators and proxies for density and biomass of exploitable abalone
- Best practice and policy on stock enhancement (including governance)
- Best practice in stock recovery
- Fishery Independent Survey (FIS) methodology

Conclusions - issues

- Abalone fisheries are extremely vulnerable to fishing and environmental change
- Abalone fisheries have the potential to have hyper-stable catches making CPUE a problematic indicator
- There is probably a new regime shift in some fisheries whereby the habitat can no longer support past levels of historical catch.
- Co-management should not result in the government not taking ultimate responsibility for the status of the stock

Conclusions – Some of the actions needed

- Create timely, transparent fine scale spatial data, including catch, length frequency and in the future, pre-recruit indices
- Develop and test indicators that are predictive
- Create habitat maps – with productivity/yield overlay
- Continue cross-jurisdictional cooperation/collaboration
- Build industry/manager capacity to increase effective engagement