

## **Whether for Rebuild or Consolidation of Western Rock Lobster Stock Abundance and Industry Profitability – the Recipe for Success is Constraint.**

There are important lessons to be learned from the New Zealand rock lobster fisheries experience over the past three decades. The transition from open access to limited entry and then to a more formal rights-based management regime has enabled ‘field testing’ and evaluation of a range of management interventions, all of which have had social and economic consequences for industry participants and other stakeholders. And some of which have been more successful than others in terms of halting stock decline, rebuilding depleted stocks, and maintaining preferred levels of stock abundance.

There is nothing happening in the western rock lobster fishery in 2009 that has not been experienced in one or more of the nine New Zealand lobster fisheries since the introduction of rock lobsters into the Quota Management System (QMS) in April 1990.

The commentary which follows is written from the perspective of an informed observer of the western lobster fishery, not an investor or a participant. My observations are drawn from my own visits to Western Australia, my conversations with fishermen and fisheries managers then and since; information gleaned from media reports and fisheries journals; information gleaned from the *Crayzone* web site to which I am subscribed; and finally my accumulated experience and technical knowledge of research and management options for lobster fisheries generally.

**In this paper I deal with various aspects of the western rock lobster situation as currently being reported and then offer suggestions as to a pathway forward for the industry.**

**Is the stock in trouble?** There seems to be hot debate within the industry catching sector<sup>1</sup> about the current and predicted status of the stock. The predictive indices confirm the prospect of low stock abundance over the short to medium term. Some industry personnel have challenged the accuracy and reliability of the predictive indices, citing doubts about the integrity of the puerulus collectors, the design of the collector programme, and the choices of material and locations used for the surveys.

In my view it is highly unlikely that a predictive index that historically has been so reliable could suddenly be so deficient. It would be a grievous mistake in my view for industry personnel to ignore the recent settlement signals and dismiss the prospect for future low recruitments.

**How much is enough? The value adding opportunities:** The western lobster fishery has enjoyed prolonged periods of relatively high catches. The measure of fishing success used by many participants and observers appears to be the volume of landed catch rather than the value. However, the current pause in stock abundance provides an opportunity for the industry to reflect on the prospect that less may indeed be more if new and different harvest tactics are deployed.

The export markets for rock lobsters have changed. Highest prices are paid for live rock lobsters within preferred size and weight ranges. Western rock lobsters compete with the more preferred cold water/southern rock lobsters in that premium market. It is possible that the western lobster industry could

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<sup>1</sup> As evidenced by some of the *Crayzone* web site dialogue and various print media reports of industry responses to recently announced effort controls.

ride out a period of stock decline by taking a greater focus on the quality and value of the landed catch. The economic impact of stock decline can be mitigated if the way in which you fish and how and when you land your catches to markets are reassessed and amended.

**Can the fishery be rebuilt?** Yes – there are numerous examples in New Zealand rock lobster fisheries. Rebuilds – defined as increasing stock abundance over time - are achieved as a consequence of three factors – catch reductions, natural cycles of larval settlement and recruitment, and patience.

There is a further challenge to determine the level at which a stock is “rebuilt” and then choose an appropriate maintenance strategy to replace the rebuild strategy.

**Will a ‘quota system’ do the job?** Yes and no. In my experience many Australian fishing industry participants (including managers and consultants) have a very superficial appreciation and understanding of the New Zealand quota system. A ‘quota system’ can do the job if you design and implement the correct system and have clear objectives for it.

The QMS has two core components – the first is that the system is a property rights regime – more about those in a moment. The second core component is output controls – the New Zealand system relies heavily on limiting removals from fishstocks in support of agreed management outcomes. Lesson number one from New Zealand is this:

- quotas (property rights) are the currency of entry and participation in fisheries; output controls are what really do the business in terms of stock rebuilding and/or maintenance of preferred stock sizes.

Western rock lobster has a long established property rights regime – in the context above your ‘quotas’ are your vessel licences and pot entitlements. I can draw numerous parallels between the western rock lobster pot market and the quota trading market in New Zealand. The transfer price of pots demonstrates similar trends and scale to transfer prices of quota.

**But I am getting ahead of myself and need to return to the topic of output controls – which are constraints on aggregate (the fleet) and individual removals.**

The terminology most often used is “Total Allowable Catch” within which allowances are made for commercial and non-commercial extractive users. The industry share of a TAC is the Total Allowable Commercial Catch (TACC) – and the individual commercial participant’s share of the TACC is an individual transferable quota – ITQ.

This might seem like basic stuff but the most demanding phase of any transition to output controls (TAC/TACC) is the initial allocation of ITQ.

But assuming for the moment that you can traverse that challenge with minimal difficulties, the exercise is futile in terms of the intended outcomes (which are primarily stock rebuild and consolidation) if the TAC/TACC is not set correctly.

**There is one immutable law of the fisheries management universe confirmed by the New Zealand rock lobster fisheries experience:**

- **Any TAC/TACC which does not effectively constrain catch in any one season will significantly delay intended management outcomes. Any TACC must be a limit, not a target. This is fundamental to the success of output controls as single-species management interventions.**

**So let's pause here and review the situation:** Is the western rock lobster fishery in decline? The evidence confirms that it is – catches and catch rates have declined over an extended period of recent history. The historically reliable predictive indices confirm that there is no flush of 'new' fish (pre-recruits), no pulse of recruitment entering the fishery, and therefore no real prospect of maintaining current catches and catch rates in the short to medium term let alone see any improvements.

Industry participants and departmental fishery managers must manage themselves through this slump<sup>2</sup>. The historical management interventions are input controls – controls on effort in the form of days fished, gear types, gear limits, maximum and minimum capture sizes, area and time closures etc.

It is possible that the current slump could be 'managed' by a continued reliance on the full suite of current input controls. However the down side will be economic cost, economic and administrative inefficiency, and attrition.

An alternative management response could be a variation on the 'quota system' as tested and proven in New Zealand lobster fisheries and elsewhere. Our system is not a pure output control but the principal reliance is on the TAC/TACC. To be anywhere near as effective in constraining removals from a stock, any combination of input controls will be more costly and more economically inefficient than a credible catch limit (TAC/TACC).

If the western rock lobster industry sees merit in a management intervention which:

- reduces economic inefficiency,
- allows greater flexibility to fishermen to decide when and how they fish, and
- enables industry participants to move in and out of the fishery whilst maintaining their investment equity;

then a properly designed and implemented 'quota system' can deliver.

I place particular emphasis on 'properly designed' and in order for the design to be robust in terms of intended outcomes; the lobster industry must be actively involved in the processes.

**If the devil really is in the detail, where does the devil lurk?** There are two set pieces that have to be agreed if a 'quota system' is your preferred option. These are –

- Stock assessment and TAC setting

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<sup>2</sup> I deliberately use the phrase "manage themselves" because we cannot effectively manage the stock/species in order to offset observed and predicted stock decline. There is a complicated issue around what are known as stock/recruit relationships in lobster fisheries which is counter intuitive to general views about egg production and future abundance.

- Initial allocation of ITQs

In some respects each is important as the other but I assign priority to the stock assessment and TAC setting because if the TAC/TACC is excessive/ineffectual then the system fails.

Consider the scenario where both industry and fisheries scientists (a collaboration that must be both fostered and encouraged) are agreed on an effective TAC/TACC and the regulatory framework is in place which will ensure that the overall limit is not exceeded. Industry participants are then let loose at the start of a season in the race for fish which will end when the TACC is reached. This system is often called an “Olympic quota” and even if good for the fish stock, will deliver argument and attrition to the industry participants.

The alternative is an individual transferable quota system – where the sum of all the ITQs is equal to the agreed TACC. ITQs don’t entirely remove the race for fish but they do protect the fishing opportunities of individual participants who might otherwise be swamped by the more aggressive race for fish that will occur in the Olympic system. The market for catching rights (ITQs) allows smaller players to exit with some dignity or to expand their business by acquiring the ITQs of others.

And most of you reading this will be thinking – *‘but that’s what we do now, expect we are buying and selling (or leasing) pots to establish our stake in the fishery’*. Yes, that is correct, but in the current period of stock decline pots themselves come with no guarantee of catch, whereas ITQs do (because they are a proportional share of an agreed TACC intended to constrain commercial removals in any one season). Provided that it can be used<sup>3</sup>, an ITQ should be a stronger and more secure transferable property right in comparison to a pot entitlement.

**So who needs to be doing what here?** Industry participants and departmental fisheries scientists must work collaboratively to determine ‘safe’ future yields from the western rock lobster fishery.

**Industry and scientists need to consider the scale of management areas and extent of TAC/TACC setting for the western lobster fishery.** For example – one TAC for all of the western lobster fishery or separate TACs for the established zones or for some combination of zones? My recommendation is not to make management areas too large – but the biological and behavioural characteristics of the lobsters should guide the discussion and final decision making.

**Industry participants should decide the most equitable allocation mechanism.** This is a huge challenge as many of you may have observed in South Australia and to a lesser extent in Victoria and Tasmania. My observation of the Western Australian fisheries management policies and procedures leads me to expect even greater challenges need to be overcome by the western rock lobster industry. Some of the issues that require careful and immediate consideration are –

- Pots/pot entitlements have been the currency of trade and exchange in the fishery for many decades. There are legislative and regulatory reasons why allocation of ITQs will be linked to ownership of pots. Therein lies a problem – there is no official register of ownership that I am aware of. I assume that there must be a register of transfers (leasing and/or sales) but allocation of ITQ will probably be linked (all or in part) to the owners of pots, not the current users of them.

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<sup>3</sup> Assuming that access to fishing grounds is not denied - for example any declaration of a marine protected area in which lobster fishing is prohibited.

- If catch history is a component of allocation, who owns the catch histories? Do fishermen (incumbent or previous) have a claim to “ownership” or are their catch histories linked to the pots they have used (and may only be leasing) or linked to the fishing licence which enables them to use the pots? Likewise, if fishermen are operating under the authority of someone else’s fishing licence, which of the two persons should be eligible to claim “catch history” – the owner or the person who fished?
- If the decision is made to establish two or more management zones, each with a separate TAC/TACC, and a vessel has a history of fishing across more than one zone, how will future access be determined?
- Should there be minimum and maximum quota holdings – and should grandfather clauses be implemented to enable incumbent operators to maintain their current status/ranking in the fishery?
  - ∞ For example if the limit on ITQ ownership was 10% of the available TACC and an incumbent operator has the catch history in the stock in excess of 10% should he/she/they be forced to sell down or forfeit any allocation above 10%?
  - ∞ For example, if industry believes it important that there be no expansion of vessel and pot numbers when a ‘quota system’ is implemented it could be agreed that any intending new entrant possess a minimum quantity of ITQ by ownership or by lease before being allowed to fish.
- Industry participants do need to very carefully think through the various consequences of a quota allocation process. In my experience when advising the Victorian rock lobster industry and several AFMA allocation advisory committees, there is a legislative requirement in Australia that requires the ranking of “wealth” within the current industry structure to be preserved in the transition to any new management regime. In each of the southern rock lobster fisheries in Australia the allocation of ITQs has been made to incumbent permit holders on the basis of the combination of pot numbers and catch history.<sup>4</sup>
- I do not expect allocation in western rock lobsters to be easy because of the historical status of pot entitlements being the principal currency of entry to the fishery and the absence of any register of ownership which might conceivably assign a catch history to a pot.
- My advice is for the industry to come to grips with these challenges immediately – because they are difficult to resolve, are potentially very divisive, and in some respects ultimately determine the success of the new management regime given that the true potential of these ‘new’ property rights (entitlements to a share of a TAC) may not be fully realised if the relationships between the rights holders are not sufficient to support cooperative and collaborative endeavours that can increase the quantity and/or value of those rights.

**Meanwhile, back at the stock assessment:** You cannot manage what you do not know. Good – as in accurate and reliable – fishery data are essential to stock assessments and fishermen are the principal sources of fishery data. Fishermen should take care in record keeping and reporting and maintain an active interest in how their data are interpreted and used.

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<sup>4</sup> In New Zealand the allocation of ITQs was based solely on reported catch histories. Since 1996 allocation of ITQs for any new stocks into the QMS is through a public tender process after 20% of the new TACC has been allocated consistent with an agreed Crown/Maori Treaty settlement.

Fishermen must also actively participate in the discussion about size and extent of any new quota management area/s. Lines on charts can be useful from an administrative perspective but when they are intended to designate the boundaries of a stock they must be best aligned to what is known about the biology (expertise of researchers) and behaviour (expertise of fishermen) of the lobsters.

Obviously it is important to maintain a spawning stock biomass – the breeding population – to enable sufficient egg production in support of future abundance. This is why fishery managers maintain the prohibition on taking berried females, protection of setose females and maximum legal sizes. Those input controls must be retained – they can be enhanced – and in time could be modified by linking them explicitly to the TAC/TACC.

**Are we really in control?** The fact of life is that nature manufactures stock abundance and that fishery management interventions only address the rate at which lobsters are removed from the ocean. What we are trying to do when setting a TAC/TACC is to buffer ourselves against future declines in stock abundance by “smoothing out” the natural, cyclical variations in settlement and subsequent recruitment to the fishery. We set TAC/TACCs in order to maintain catches and catch rates through long periods of natural variability caused by environmental conditions<sup>5</sup> over which we have no effective control.

When we “manage” fishing we do not create any new lobsters – we just use what nature has given us in a more responsible and consistent manner. We are attempting to avoid the boom and bust cycles that have characterised various fisheries over time. So don’t get too carried away by the power of a quota system – we use it to ration lobsters to ensure future supplies – quota is a commodity of trade and exchange amongst fishery participants – it is principally directed at social and economic outcomes. The more powerful stock management tool is the output control – the TAC/TACC.

**I strongly encourage industry participants – including the investors, the catching sector, and processor/exporters – to look at the future of western rock lobster fishery in the context of a business plan. You are in the business of fishing so take the strategic approach to how best to maximise the value of your fishing opportunity and the commodity you produce.**

There is no doubt in my mind that *‘he who owns quota is king’* if TAC/TACCs are correctly set and monitored – but such is the reality of the business world, and we are in the business of fishing – not operating a social welfare agency.

An agreed industry business plan lays a secure foundation for the fishery management plan expected by the wider community and for which a Minister holds statutory responsibilities.

Finally for this commentary – **knocking down some myths and legends.**

**Myth number one** – *a quota system is more expensive to enforce.* False. Undeniably and demonstrably untrue – and not a valid excuse for dismissing the quota system option. The cost of enforcement of any rights-based system is a function of the level of compliance demonstrated by the participating rights

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<sup>5</sup> For example the El Nino and La Nino – southern oscillation events; oceanic temperature and current variations; habitat modification due to non-fishing activities etc.

holders. The focus of enforcement will shift from on the water to administrative oversight but the cost should be less not greater.

**Myth number 2** – *a few companies will end up owning all of the quota.* False, unless the incumbent industry participants allow it to happen. The quota market – like the market for pots – is one where willing buyers deal with willing sellers. There is no greater control able to be exerted over ownership of quota than is already exerted over ownership of pots.

**Myth number 3** – *it will be impossible or at very least difficult for new entrants to get into the business.* False, it will be no easier or no harder than it is now. The cost of entry to the business of fishing is the cost of fishing entitlements. The entitlements are currently a vessel licence and the pots and there is cost associated with each. The cost of ITQs will be commensurate with, and will displace, the cost of pots.<sup>6</sup> The security of ITQs is arguably better than of pots.

**Myth number 4** – *only companies will be able to afford to buy quota.* False. If ITQs are properly specified from the outset they could possibly be a more secure bankable/mortgageable asset than are pots at present.

**Myth number 5** – *the cost to fishermen of going fishing will increase because of quota lease prices.* False, in most circumstances. The cost of going fishing should be similar or less. Leasing ITQ should be no more costly or complicated than leasing pots. A TAC/TACC should set the stock on a pathway to increased abundance. Catch rates will improve as a consequence. The costs of catching any given quantity of ITQ will decline.

The experience in New Zealand is that quota lease prices are driven very high by two factors – scarcity of available quota (the TACC is significantly constraining catches because of high stock abundance) and strength of export markets as measured by prices paid to fishermen for their catches. Prices paid are in fact more of a reflection of current exchange rates against the New Zealand dollar than they are of market prices paid. The inevitable financial correction does occur, but there is a lag.

**Myth number 6** - *we should be able to get rid of pot limits and use as much gear as we like so long as we don't exceed our quota.* False. Any decision to relax pot limits or gear specifications must be carefully thought through. There are biological, social and science consequences to consider. My advice is that you should transition to a quota system with most of your existing input controls intact. The one exception would be the limitation on allowed days fished – that should be the first thing to go because of the gross economic inefficiencies inherent in that control. Closed seasons would be the next to go if I was making the decisions. In the context of the business of fishing you must strive for the best alignment between production and market.

**Myth number 7** – *the quota management system will fix it – once we have that we won't have to worry.* False. Fishing still needs to be managed. The combination of ITQs and input controls can be manipulated to further enhance both the status of a stock and the economic performance of the industry.

**Myth number 8** – *it is the recreational catch that is causing the greatest problem in this fishery – they need to be cut back.* False. The commercial catches are significant the recreational catches, other than very locally, are minimal in comparison. If you really look at the numbers you will find that recreational

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<sup>6</sup> The cost of pots for the Western lobster fishery shows remarkable parallels with the cost of ITQs in New Zealand in situations where a pot is assigned a quantum of catch for the season. Look to South Australia and Tasmania for similar examples.

catches are somewhere between 4% and 6% of total removals at any level of stock abundance. Take responsibility for and give priority to dealing with the current and predicted declines in abundance and don't be wasting time on the "blame game".

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