ACIL ALLEN CONSULTING

REPORT TO
NSW OYSTER STRATEGY WORKING GROUP

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NSW OYSTER INDUSTRY STRATEGY

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NSW OYSTER INDUSTRY STRATEGY

1 A vision for the future

1.1 Why the NSW oyster industry needs a strategy

Commercial oyster production is a long-standing industry that contributes significantly to the economic wealth, environmental sustainability and social fabric of coastal NSW.

Late last century a series of environmental shocks and increasing competition started to progressively squeeze the NSW oyster growers on both the production and market side – dramatically shrinking the size and value of the industry.

The gross value of production has stabilised just above $30 million per annum, and there are signs of growth in volume and price in parts of the NSW oyster industry. Nonetheless production and market side pressures remain and continue to drive structural change.

Today only 50 per cent of permit holders were in the industry a decade ago and 20 per cent have joined in the last five years. Over 300 permit holders have left the industry since the turn of the century – a trend that continues. The performance of individual oyster growers is intensely variable. There is wide spread concern around future viability-profitability and a lack of cohesion-confidence within industry and government on how this can be addressed.

In late 2014 the NSW Shellfish Committee established an industry led working group to develop a strategy – to halt the decline and focus industry development into the future. Without a strategy adaptation to production-market pressures will remain fragmented, placing the industry at risk of greater decline and slower development rates than can be achieved with one in place.

This report outlines the first phase of the strategy – outlining a vision and what the strategic priorities are based on the deliberations of the working group and discussion with industry at the 2015 Oyster Field Days in Old Bar and Pambula. Individual oyster businesses can use the strategy to inform their own actions. The industry representative structures now need to develop and implement an implementation schedule to realise the significant potential oysters have to increase the prosperity of the industry and NSW.

1.2 NSW oyster vision – the path to prosperity

The NSW oyster industry is tough, resilient and unique. The industry preserves despite production and market pressures and is the largest source of Sydney Rock Oysters in the world. It also lacks a vision as the industry as undergone fundamental structural change in the face of production-market pressures.

Four cornerstones provide the foundations for the industry's future prosperity (Figure 1 overleaf). A resilient and productive production system combined with effective marketing is needed to produce and sell oysters that are, competitive, demanded and valued by customers for their uniqueness. This requires a regulatory system, to provide optimal natural resource base access and food safety-biosecurity integrity, and the ability for the oyster community to advocate the industry's interests. The industry will only be prosperous if there is continued focus on sustainability, connectedness and profitability in developing and leveraging the cornerstones.

Figure 1 **NSW oyster industry vision**

These vision elements (Table 1) were at the centre of the working group's deliberations on what priorities should be in the strategy. In the future they must also be at heart of individual oyster growers, government, representative bodies and others actions in planning and coordinating their actions to develop the industry.

Table 1 **NSW oyster industry vision elements**

Elements	Description
Industry cornerstones	
Production system	NSW oyster production has the resilience to adapt to change and improve productivity
Markets	NSW oysters are in demand and valued in the market for their quality and unique features
Regulation	Leases are open and oysters can be readily moved between estuaries as much as possible while maintaining high food safety and biosecurity standards
Community	The oyster industry has a strong voice to advocate its interests with government, community and the market
Linkages	
Profitable	NSW oyster industry is profitable for growers who focus on the market and cost-effective production systems
Sustainable	High levels of environmental stewardship underpin the sustainability of the NSW oyster industry
Connected	A shared vision combined with excellent communication supports a connected and successful industry

2 Strategic priorities

The NSW oyster is mature, so the strategic challenges and opportunities it faces are well known by many. There are a plethora of new/existing ideas, capabilities and actions that have or can be deployed.

At the same time the continued "*meat in the sandwich"* effect, of production and market side pressures driving on-going structural change, means simply executing existing strategies better, by oyster growers, industry services organisations and government, is insufficient.

The industry needs to look at how to resource, focus and coordinate its actions in new ways to develop. The approach will need to be adaptive because not all actions are fully known today, particularly since the desired industry structure and its operating environment will remain uncertain for a number of years if not longer.

There are five themes where considerable potential gains lie to frame the industry's strategic priorities (Table 2). For each theme the strategy outlines what outcomes (changes) the industry should pursue over the next five years and the priorities to achieve them. The outcomes and priorities are linked and will required action by oyster growers, industry services organisations and government. The following sections outlines the basis for each outcome and the recommended priorities.

Table 2 **NSW oyster industry strategic priorities**

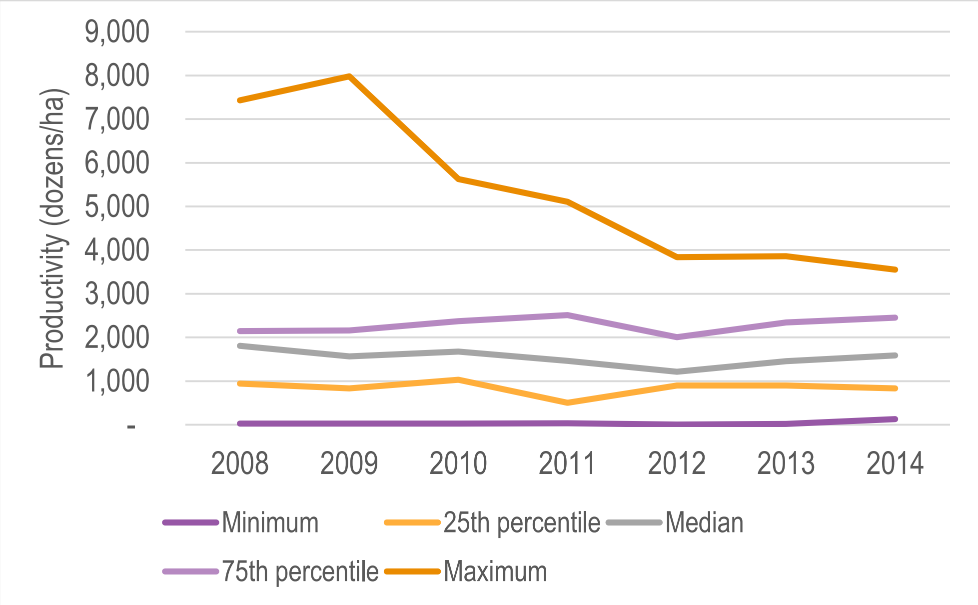
Theme	Outcome (change) sought	Priorities
Production system	▪ Resilient production system ▪ Consistent cost effective product ▪ Consistent access to high quality spat	1. Increasing of adoption of technologies and practices 2. On-going targeted R&D to provide a pipeline of innovations 3. The breeding-hatchery-nursery system is commercially viable
Markets	▪ Stronger industry led marketing ▪ NSW oysters in demand and commercially valued for their quality and unique features	4. Encourage development of marketing skills and partnerships 5. Acceptance and use of grading standards widespread in industry
Environment and disease	▪ Oyster farmers can harvest more often and readily transfer oysters ▪ Effective and efficient biosecurity ▪ Environment stewardship	6. Shellfish Program and biosecurity arrangements optimises the times estuaries are open for harvest and oysters can be moved between them 7. Targeted estuary rehabilitation 8. Expand EMS to all estuaries
Industry structure and governance	▪ Growers can access capital to develop their businesses ▪ New entrants attracted to industry ▪ Re-create effective advocacy voice ▪ Self-reliant and coordinated industry representation	9. Improve ability to secure bank and other sources of finance 10. Reinvigorate linkages within and between industry and representative structures 11. Targeted capacity building of groups and individual growers
Policy	▪ 100% leases available and used ▪ Leases are secure and well managed ▪ Effective, efficient and equitable food safety system and biosecurity system	12. Review and improve Shellfish Program, biosecurity arrangements and the NSW Oyster Industry Sustainable Aquaculture Strategy

2.1 Improve oyster production system resilience and productivity

Productivity is highly variable across the 42 NSW oyster producing estuaries (Figure 1). While the characteristics of each estuary explains differences between them, the overall productivity growth trend is static. A number of estuaries are closed or restricted (due to poor water quality and disease) and some estuaries are experiencing declining productivity. This includes Wallis Lakes, the largest oyster estuary in NSW, where productivity has declined 47 per cent since 2008.

The static/declining productivity trend is symptomatic of the production pressure on the industry. On top of that many estuaries and individual growers are reported to be struggling to maintain quality and production costs, which in turn reduces their margins and market competitiveness.

Figure 2 **NSW oyster productivity**



Source: NSW DPI oyster production data 2015

Outcomes

Unless these challenges are addressed the prospects for maintaining, let alone lifting, the productivity and resilience of the NSW oyster production system are low. Most of the gains will need to come from individual oyster growers improving their own production systems. Additional marginal gains can be made from improving the efficiency of environmental, food safety, biosecurity and estuary regulations while maintaining their integrity (Priorities 6 and 12).

To improve the production system as a cornerstone of the NSW oysters over the next five years, the industry will need:

- a resilient production system that can readily adapt to variability and shocks
- a cost effective production system that produces a consistent supply of quality oysters
- consistent access to high quality wild catch and hatchery spat

Priorities

The priorities for achieving the production system outcomes required are:

1. Increasing of adoption of technologies and practices that improve the productivity and resilience of the NSW oyster production system
2. On-going targeted R&D of key priorities to provide a pipeline of innovations
3. Ensuring the breeding-hatchery-nursery system is commercially viable

Priority 1. Increasing adoption

At present, while some businesses are introducing improved practices and technologies, adoption rates are reported to be slow and low. The reason for slow and low adoption rates is a function of three factors:

- *diagnosis* – oyster farming is variable and much of the decline has occurred slowly due to multiple causes making the problems and solutions hard to diagnose
- *certainty* – many of the potential practices and technologies are not mature (e.g. hatchery spat) or require additional interpretation (e.g. business benchmarking) and further innovation within the production system– which limits certainty of any gains will be and they will be realised
- *capacity* – financial and skills constraints within an individual business may limit the ability to adopt new technologies and practices

The current fragmentation of the industry is such that even when programs that can assist with adoption are provided or available (e.g. national benchmarking, LLS business planning, TAFE training, NSW DPI aquaculture field staff) industry support and participation rates are low.

This suggests that any adoption initiatives must be industry led and supported by government and others. A key focus must be on developing a learning culture within individual businesses and industry which then leverages in support from others.

The logical starting point is to appoint a facilitator to work with oyster growers and existing groups to strengthen communications, identify learning needs, and then facilitate provision of targeted programs. As a first step the NSW oyster industry should redirect a portion of its research levy to fund this role. Using the industry led principle the role should be based in an organisation industry trusts, guided by an industry advisory group. If an organisation cannot be readily found the role should be put out to tender.

Priority 2: On-going targeted R&D provides a pipeline of innovations

NSW is unique in the Australian oyster industry by having access to state government research facilities who undertake commercial oyster R&D as part of a broader remit. The industry also can direct where national R&D is focused through the Australian Aquaculture Advisory Committee.

The presence and linkage to public R&D facilities and co-funded investments is both a driver and limiter in creating an innovation pipeline of technologies and practices for the industry. The driver is simply that industry can utilise and leverage the available resources. The limiter is that industry does not fully engage to direct/utilise the R&D or may even under-invest itself and crowd out others.

Structural change and subsequent industry fragmentation are certainly affecting industry-R&D engagement. Awareness and consensus on R&D priorities/progress is low, the consultative mechanisms are struggling and representatives lack resources and industry interest to engage with grass roots. At the same time there is on-going consideration on where the marginal benefit lies, to not only target R&D, but also create more dynamic and flexible structures and co-investment to get more from R&D in the future.

The NSW oyster strategy provides the ideal platform to reinvigorate the discussion on what the priorities are and how they can be organised and funded. The strategy development process has identified three priorities which should be immediately considered and funded

- Securing funding for improving linkages in industry and adoption of technology/practices
- Quickly reviewing the Wallis Lake estuarine environment to determine if the current conditions are the "new normal" and what changes to the estuary and oyster production are feasible. This is required to establish the platform for change in the largest NSW oyster estuary
- Accelerating the commercial viability of the NSW breeding-hatchery-nursery system.

4. Ensuring the breeding-hatchery-nursery system is commercially viable

Genetic evaluation and breeding of elite varieties is the foundation of any primary industry's success. The NSW oyster industry has an advantage over Tasmania and South Australia in that it can use both wild spat and hatchery stock. The use of hatchery spat in NSW is low as the industry-owned Select Oyster Company and three commercial hatcheries continue develop a system that is financially sustainable and capable of consistently supplying spat.

Transitioning genetic evaluation from mass to family selection and then other more advanced to techniques must continue to provide spat with the desired disease and quality traits. Targeted capacity building and presence of new commercial hatcheries is also needed to reduce the time before hatchery spat is readily available to oyster growers.

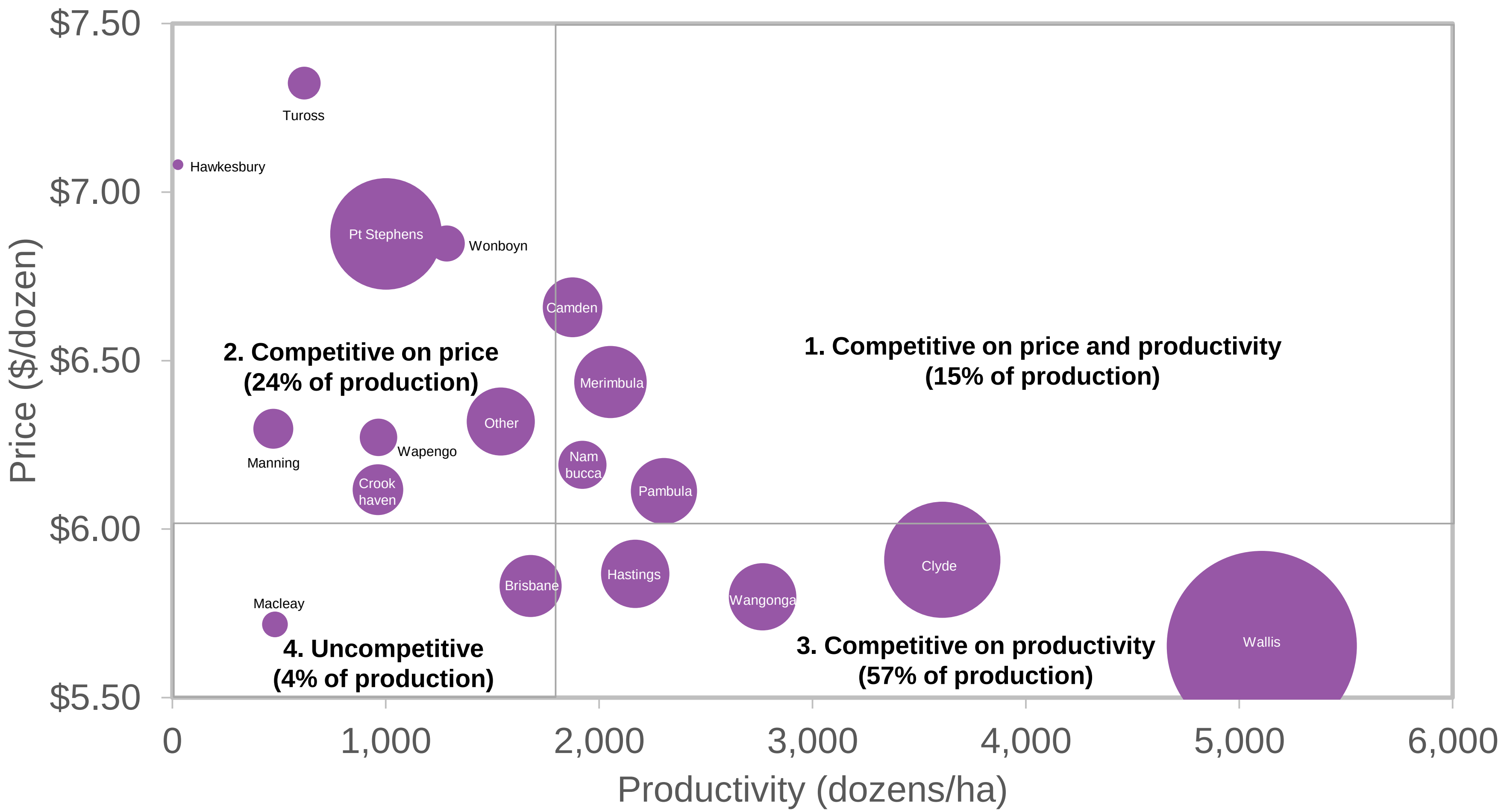
2.2 Strengthening market competitiveness

Competition from Tasmania and South Australia has led to a dramatic decline in production volumes, market share and price for the NSW oyster industry over the two decades. NSW production levels and prices have stabilised in recent years.

NSW, as the largest oyster industry in Australia, has the scale and scope to hold a number of competitive positions based on productivity and price in the market (Figure 3 overleaf). Nearly a quarter of the industry (24 per cent) hold competitive positions based on price and a further 15 per cent are competitive on price and productivity. The bulk of the industry is competitive on productivity and size (57 per cent) and a small proportion (4 per cent) do not have either price or productivity based competitiveness (largely due to disease).

Competition within NSW continues to increase as competitors' improve the consistency of oyster supply quality and volume in all markets. The rising competition alongside production challenges has led to widespread price based competition and discounting to maintain cash flow. Many NSW oyster growers can now no longer to sustain competitiveness based on traditional market relationships (individual or collective) and seasonal advantages (i.e. being in the market when oyster availability is low).

Figure 3 **Competitive position of NSW oyster estuaries**



Note: Price and productivity are the seven year median value (2008-2014). The size of the circle represents the production volume (dozens of oysters) of each estuary

Source: ACIL Allen based on NSW DPI Sydney Rock Oyster productivity and price data 2008-2014

Outcomes

The way forward to increase both the volume and value of NSW oysters is to transform the way the industry markets. This must be industry led so that NSW oysters are in strong demand and commercially valued by the market for their quality and unique features.

Priorities

The key priorities for achieving strengthening the NSW oyster industry's market competiveness are:

4. Encouraging development of marketing skills and partnerships
5. Acceptance and use of grading standards becomes widespread in industry

Priority 4: Encouraging development of marketing skills and partnerships

The presence of simultaneous niche and bulk positions within NSW (whether by choice or pressure) makes it very difficult for whole of industry to agree on how to transform its approach to market.

Historical marketing approaches will continue to serve individual oyster growers but, they will not prevent the decline in overall industry competiveness and loss of oyster growers. The rationale for greater regulation in an open market is limited, unfeasible and unlikely to provide a net benefit to industry (rather than individuals) and the wider community.

So the way forward is for industry to transform the way it markets as well as improving the production systems used (Priorities 1 and 3). Individual businesses and commercial alliances are already showing the way using techniques implemented by competitors and other industries. Broadening marketing channels through; retail, direct supply, branding, and supply groups; is increasing sales volumes and margins based on quality and consistent supply. These developments are very much in the development phase and require further innovation before they are successful.

NSW oyster growers need to start developing their own marketing skills and become in existing or new marketing partnerships. This is a step change - but without it the current decline in competitiveness will continue.

Priority 5: Acceptance and use of grading standards widespread in industry

Product grading is the foundation of any industry. The acceptance and use of grading is low in the NSW oyster industry despite the existence of standards and emergence of more reliable and cost effective grading machinery. The key adoption barriers raised are lack of awareness of available technology, cost and debate over how the multiple standards should be integrated. These need to be overcome so grading can; be used to differentiate oysters in the market; provide feedback to growers on management decisions; and generate objective data for genetic evaluation.

2.3 Environment and disease

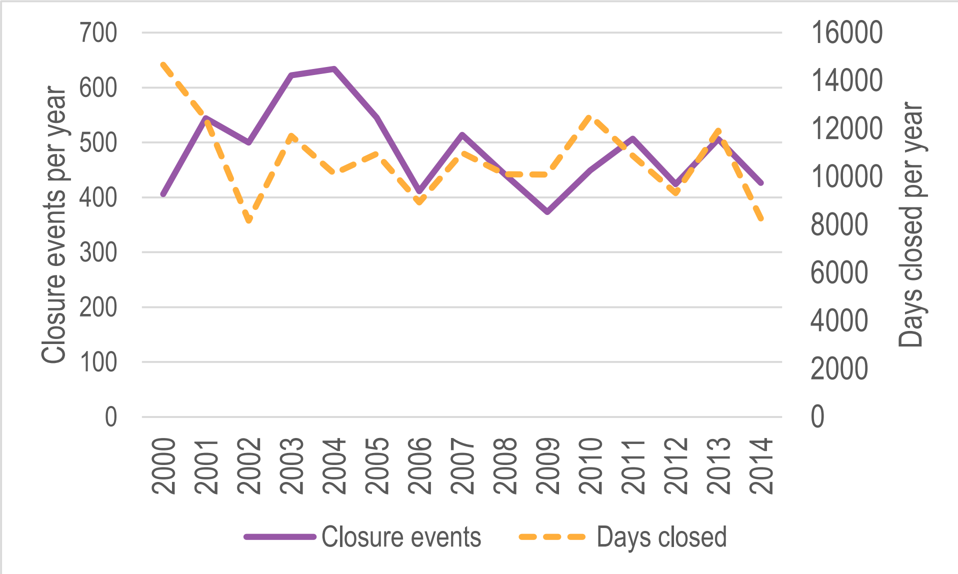
Environmental pollution and disease were key triggers in starting the decline of the NSW oyster industry last century. Changes introduced since that time now provide sophisticated joint industry-government systems for managing oyster industry food safety and biosecurity integrity.

The systems manage environmental pollution and disease risks by closing affected waterways (for oyster harvest or production) and limiting oyster movements until they are safe to be opened. While closures-movement restrictions are key to integrity they significant influence productivity through limiting practices such as harvesting times and transferring oysters between estuaries.

These systems have adaptive management provisions to balance integrity and keeping estuaries open as much as possible at the same time. For example after the Shellfish Program was introduced in 2000 the number of days closed fell based on the associated monitoring program to improve opening times. A consequence was more direct closure events which was addressed in 2005 by revising closure criteria, again based on monitoring results (Figure 4).

Estuary rehabilitation and oyster industry stewardship are also integral to managing environmental and disease risks, alongside the food safety and biosecurity systems.

Figure 4 **NSW Shellfish Program oyster closures**



Source: NSW Food Authority 2015

Outcomes

The NSW oyster industry has reached a stage where it has much greater ability to manage environmental and disease risks through its high quality food safety and biosecurity systems. With maturity comes the confidence and capacity to start using the adaptive capabilities of the systems to sustain high standards required while allowing oyster farmers to harvest and transfer oysters more often where possible. This needs to be associated to on-going industry environmental stewardship improvements.

Priorities

The key priorities for improving environmental and disease risk management are:

6. Shellfish Program and biosecurity system optimises the times estuaries are open and oyster can be moved
7. Targeted estuary rehabilitation
8. Expand EMS to all estuaries

Priority 6: Shellfish Program and biosecurity optimises the times estuaries are open and oysters can be moved

Adjusting the Shellfish Program and biosecurity system to maintain integrity and improve productivity is possible under the current systems. Adaptive management and improved monitoring has the potential to improve productivity by optimising times estuaries and open and oysters can be moved and should be pursued as a joint industry-government collaboration. To make significant gains in this area the Shellfish Program and biosecurity system should be reviewed and updated (Priority 12).

Priority 7: Targeted estuary rehabilitation

Estuary rehabilitation is on-going and a shared responsibility between land owners, industry community, councils, government. Shellfish Program monitoring shows that high sewage (7 per cent), water faecal coliform (5 per cent) and algae/bio toxin (3 per cent) results are on-going causes for closure in addition to rainfall (74 per cent). The oyster industry must maintain a strong focus on promoting and collaboration with these stakeholders to continue targeted rehabilitation that enhances the commercial, biodiversity and recreational values of NSW estuaries.

Expand EMS to all estuaries

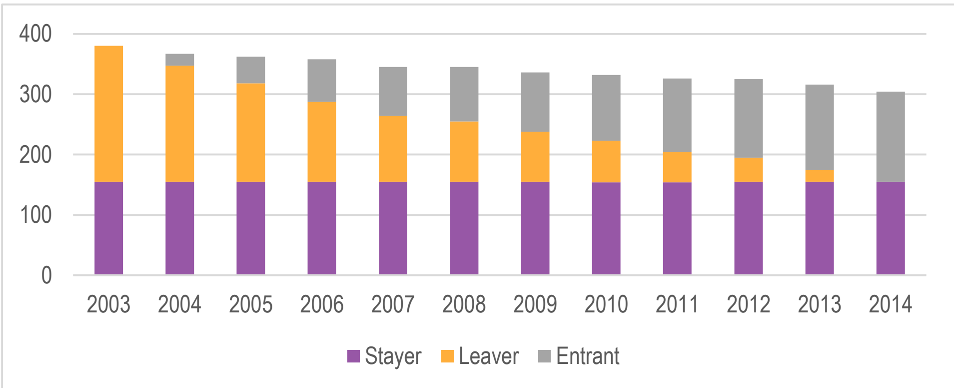
Environmental stewardship is central to the oyster industry's social licence and can assist with business improvement, network development and market position. The industry needs to build on the momentum of the lapsed Southern Rivers EMS program and look to expand EMS to all oyster estuaries in the future.

2.4 Revitalising industry structure and governance

The sustained production-market pressure is starting to create a significantly different oyster industry structure (Figure 5). Nearly half of the current permit holders (148) have entered the industry since 2003. During that time 227 pre-existing permit holders (leavers in Figure 5) and 72 of the 220 new entrants left the industry.

The number of permit holders with small (< 2 hectares) and medium (5-10 hectares) lease areas have fallen by 50 per cent and 20 per cent respectively. Over the same period the number of large (10 to 20 hectares) permit holders are static (-2 per cent) but the very large permit holders (more than 20 hectares) have grown by 17 percent.

Figure 5 **Oyster permit holders**



Source: ACIL Allen analysis of NSW DPI permit holder records

Gaining finance to fund lease acquisition and production-marketing improvements is widely raised as a constraint to development. A side effect of the structural consolidation is collapse of many networks and support for industry bodies/representative structure - making much of the industry fragmented and isolated.

Outcomes

Over the next five years the oyster industry needs to attract additional skills and finance to redevelop the industry as it continues to adjust. At the same time industry needs to create an effective advocacy voice and move towards self-reliant and coordinated industry representation.

Priorities

9. Improve ability to secure bank and other sources of finance
10. Reinvigorate linkages within and between industry and representative structures
11. Targeted capacity building of groups and individual growers

Priority 9: Improve ability to secure bank and other sources of finance

The oyster industry clearly needs additional capital to develop. Most oyster growers are small businesses and many will look to their oyster leases to provide some of the collateral required for bank finance. The ability to use leases as bank finance collateral is inconsistent across the industry at present where some banks are unwilling to consider leases as collateral even though other growers can do so, even with the same bank. This can be readily addressed through industry working with banks to develop guidelines on how oyster leases can be used as collateral for loans. More broadly the industry should be seeking additional finance and expertise from outside to finance development.

Priority 10: Reinvigorate linkages within and between industry and representative structures

Linkages to existing representative structures and communication between growers are plagued by low engagement and lack of confidence-trust that is exacerbated by competitive pressures on the industry. Fostering such linkages is crucial to the industry's future success. The industry should seek to reinvigorate linkages through two channels: industry led connections and representative outreach.

Industry led connections is about facilitating social, commercial and learning focused interactions around issues important to oyster growers. This a matter for individuals within the industry to start connecting with each other as well as any initiatives established to facilitate communication around production and marketing priorities.

Representative outreach is a wake-up call to Australian Aquaculture Research Advisory Committee, NSW Shellfish Committee, NSW Oyster Industry Sustainable Aquaculture Strategy and growers associations within the industry. These structures cannot simply afford to wait until things "get better". They need to proactively reframe their engagement mechanisms using technology to reduce participation efforts, tactical campaigning to drive interest and fostering grass root networks to gather information.

Priority 11: Targeted capacity building of groups and individual growers

Increasing the number of oyster growers completing seafood, rural leadership and other capacity is crucial and must be actively supported and promoted. Targeted capacity building of groups associated with Priorities 1 (adoption), 4 (marketing partnerships) and 10 (industry linkages) provide a logical starting point.

2.5 Strengthening supporting industry policies

Food safety, sustainable lease management and biosecurity arrangements are the policy cornerstones of the industry led by NSW Food Authority and NSW DPI. All three policies require co-investment, responsibility and coordinated management between industry and government. There is growing concern within industry these regulations are not flexible and dynamic enough to adaptively manage the balance between integrity and commercial viability.

Outcomes

Oyster food safety, lease management and biosecurity policies and regulations must be effective, efficient and adaptive to underpin industry development without imposing unnecessary burdens. The industry needs to work in partnership with government to ensure that all three systems continue to be updated and implemented properly to achieve this.

Priorities

Priority 12: Review and improve Shellfish Program, biosecurity arrangements and the NSW Oyster Industry Sustainable Aquaculture Strategy

The Shellfish Program is scheduled to be reviewed in 2015. This provides an ideal opportunity to review lease arrangements and the biosecurity at the same time, given their interconnected nature, and to improve their efficiency and effectiveness improved on an equitable basis.

In terms of the Shellfish Program some of the major concerns lie around how costs can be reduced while adapting the way regulations are applied to increase opening times cost-effectively. For biosecurity industry needs a better understanding of the current system's efficacy and how changes to existing regulations and shared risk management can provide greater operational flexibility to oyster growers.

In terms of the NSW Oyster Industry Sustainable Aquaculture Strategy ensuring all leases are available and used will provide access to the full production base of the industry. The leases must be secure to attract and protect the improved infrastructure industry will increasingly use to drive productivity growth. Residual issues such as land-base access in some estuaries and waste shell disposal should also be included in the review.

2.6 Strategy implementation

Industry leadership in partnership with government is required to oversee strategy implementation. The proposed governance arrangements are to continue the industry working group as a sub-committee of the NSW Shellfish Committee.

The working group will be responsible for working with industry, government and the representative structures to scope each priority and track progress over the next five years.